THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
The Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal ESTABLISHED 1835 · THE RAILWAY RECORD.
RAILWAYS ILLUSTRATED · THE RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY
AT
33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"
Telephone No.: WHITEHALL 9233 (7 lines)

Annual subscription payable in advance and postage free:
British Isles and Abroad.....£2 5s. 0d.
Single Copies .....One Shilling
Registered at the General Post Office, London, as a Newspaper

VOL. 77 No. 19 FRIDAY, NOVEMBER 6, 1942

CONTENTS

	PAGE
Editorials	433
Letters to the Editor	436
The Scrap Heap	437
Overseas Railway Affairs	438
Mobile Gas-Producer Units	440
Would it Pay to Abolish First Class?	442
An Improved Milling Machine	445
L.M.S.R. Express Locomotive with Enlarged Boiler	446
Personal	447
Transport Services and the War	449
Stock Market and Table	456

DIESEL RAILWAY TRACTION SUPPLEMENT

The November issue of THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price* 1s.

NOTICE TO SUBSCRIBERS

Consequent on further paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and facilities for such dispatch. We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas*

REDUCTION IN SIZE OF PAGE

To economise in paper our readers will observe a slight reduction in the size of THE RAILWAY GAZETTE *in that the size of the page has been reduced from* 9 *in.* × 12 *in. to* 8½ *in.* × 11½ *in. The type area of the page remains the same, namely,* 7 *in.* × 10 *in., but the surrounding margins have been reduced. This of course detracts from the appearance of the paper, but is one of the exigencies of the war*

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:
Mondays to Fridays 9.30 *a.m. till* 4 *p.m.*
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

The Engineer in National Affairs

IT is strange that in the direction of the country during a war which is characterised by its mechanisation the participation of the professional engineer has not been greater. It might have been supposed that, in the search for leaders attention would have been given to members of a profession which requires a close training in logical thought, and which has played so marked a part in the development of the modern world, and, to no less a degree, the implements of modern war. Professor C. E. Inglis, President of the Institution of Civil Engineers, in a broadcast on October 23 made a plea that engineers should be entrusted with more responsibility in the affairs of the nation, both in war and in peace. He pointed out that those who plan and carry out great engineering works had to be men who possessed forward-looking minds, coupled with great resolution and powers of leadership, and these attributes were those required of our leaders in these days, and no less essential in the years of reconstruction. Yet, for political leadership in this country, it is a strange truism that scientific and technological ability would seem to be almost a disqualification. No doubt opinions may differ as to whether engineers by their training and environment are suited for the particular atmosphere of the political arena, but this cannot be advanced against the propriety of using their especial abilities and positions of the highest authority in matters which properly fall within their ambit. Professor Inglis pertinently argued that if engineers were required to come into the open, as they should, and take a leading part in the new order that they have created, they would have to be offered something more tempting than an ocasional invitation to serve on a Government advisory committee. In modern conditions the commercial greatness of nations, and the supply and transportation of the necessities of life, depend more than ever on engineering enterprise, and as even agriculture is becoming mechanised, it may be said that our whole economic structure now rests on the planning, ingenuity, and organising ability of engineers. Without the fundamental driving force, which emanates from members of the profession, economists would have nothing to economise.

G.W.R. Road Transport Organisation

The retirement of Mr. F. C. A. Coventry from the position of Road Transport Superintendent of the Great Western Railway, as announced on page 447, also marks the disappearance of the Road Transport Department from the company's organisation. The department was established in 1922 when Mr. Coventry was placed in charge and he was largely responsible for the very extensive developments in passenger and goods road transport which subsequently took place. After the passing of the Great Western Railway (Road Transport Act) empowering the company to own, work, and use road vehicles and to enter into arrangements with other parties for the operation of road transport, it was decided to follow a policy of co-operation rather than competition with existing bus undertakings. In the result, within about two years after the passing of the Act, the company had transferred the whole of the G.W.R. passenger fleet to the principal bus companies operating in its territory; it had acquired a financial interest, not exceeding 50 per cent., in those undertakings. Thereafter the activities of the Road Transport Department became very largely confined to goods and parcels cartage operations. With the retirement of Mr. Coventry, the company has taken the logical step of abolishing the department and of placing the majority of its staff under a Cartage Controller on the staff of the Chief Goods Manager. It is understood that the Cartage Controller will be responsible to the Chief Goods Manager for all goods cartage operations and to the Superintendent of the Line for the cartage of parcels. In addition, a Road Motor Engineer has been appointed who will be directly responsible to these officers for the supply and maintenance of road vehicles and to the General Manager for all technical matters.

An Industrial General Staff College

On several occasions in our columns we have referred to the need, which the present war has made apparent, of having a selected body of men which in time of emergency would form what might be termed a General Staff for industry. In his address to the Institution of Production Engineers, reported at page 452, Sir Ernest Lemon gives some details of what would be required in the way of training this Industrial General Staff. He suggests that there should be created a staff college suitable for training selected persons from industry for the positions they would be called on to occupy in time of war. The studies would include not only such matters as siting of factories, with due

regard to labour possibilities, immunity from air attack, and so on, but also the industrial efforts required for a given Navy, Army, or Air Force, taking into consideration at the same time civilian requirements. An important factor mentioned by Sir Ernest is the necessity for the selected persons to return to their work after serving for a period on the Industrial General Staff for a very good reason that if they were to be kept too long from industry, the danger of ceasing to be in close contact with up-to-date practice would be very real. As he pointed out, the idea is really a development of what has been done in transport; for years before the war the Railway Operating Corps has spent some time of each year training with the Army, and the benefit of this peacetime co-operation has been well proved during the war. The usefulness of this staff would not be confined to the war, but would be of equal value during the period of reconstruction.

■■■■

Transport Information Service in London

It may be recalled that, during the intensive air raiding on London, many regular travellers were at a loss to know how best to journey between their homes and their workplaces, by reason of the temporary suspension and interruption of train and bus services. It was to meet their needs that the main-line railways and London Transport set up information kiosks in the streets at central points or near important stations in London. The first was brought into service on October 31, 1940, and two years have now passed since that date; in all, sixteen kiosks were established. Since then the staffs of men and women have answered an average of 29,500 questions a week. In the months of April and May, 1941, they averaged 58,000, and in the week after the raid of May 10-11, 1941, more than 100,000 queries were answered. Since the trains resumed their more regular though less frequent timetables, queries have been coming mainly from travellers using unaccustomed routes, workers travelling to war factories, persons who have never travelled by train before, and members of the United States and other Allied Forces. With so many strangers and Allied troops in London, the duties of these kiosks have changed. The staffs have to cope with an enormous variety of questions, ranging from telling a Frenchman who had just escaped from France how he could contact his relations who had escaped a few weeks before him, to the busy business man who wanted train times to an industrial city and back again as quickly as possible. Thirty per cent. of all inquiries now come from Service personnel. The kiosks are open from 9 a.m. to 6 p.m. in a seven-day week, and in two years three million questions have been answered. The Merchant Navy has built up a great reputation for delivering the goods regardless of trouble, so it is fitting that the International Marine "Answering" pennant should be flown from a short flagstaff above these information kiosks.

■■■■

"Transport Goes to War"

One of the many difficulties of war conditions is that it is often undesirable on security grounds to give credit where it is due at the time of a particular occurrence, and when the security restrictions no longer exist the event has lost its topicality. This applies with particular force to the achievements of the railways and other transport organisations in preparing for war conditions and successfully surmounting many types of war difficulties as they arise. At the time of a severe air raid it is seldom possible to describe the emergency activities of transport undertakings without revealing more of the damage and dislocation than Authority deems prudent. Similarly, the special traffic arrangements in connection with the arrival and departure of convoys cannot be described with impunity. It is therefore a happy circumstance that the Ministry of War Transport has arranged through the Ministry of Information to issue an admirable general picture of the situation during the first three years of the war in the form of a 1s. booklet entitled "Transport Goes to War," to which we made brief reference last week. The illustrations are particularly striking, and give the layman a vivid impression of the almost insuperable difficulties with which transport workers in all spheres—railway, road, docks, and canals—have been faced, and which they have overcome with noteworthy success. The keynote of the story is "the goods go through," and this is the highest tribute which can be paid by the Government to any organisation—the fact that it has achieved its essential objective.

■■■■

The Enlarged Paris Métro

An Act passed December 27, 1941, provided for the amalgamation of the Paris Underground Railways, the Métro, and the Société des Transports en Commun de la Région parisienne, the S.T.C.R.P., by which the public passenger road services were operated. The amalgamation has now become a fact, and all assets of the S.T.C.R.P. have been taken over jointly by the City of Paris and the Département de la Seine councils, and leased by them to the Métro. This company's capital has been increased by 10 per cent., and the additional shares have been allotted to the two councils; two members appointed by the City and the Department councils have joined the Board of Directors of the Métro. The concession of the Métro company, which would have ended on January 1, 1945, has been extended to January 1, 1948. Some further particulars are given on page 451. The Métro's operating results for 1940 and 1941 were as follow:—

		1940	1941
Passengers	No.	650 millions	1,035 millions
Revenues	frcs.	736 ,,	1,217 ,,
Expenditures	,,	413 ,,	694 ,,
Net revenues	,,	323 ,,	523 ,,

A 24 per cent. dividend was declared for the year 1941. With restricted road services the Métro has had to cope with a considerably increased volume of traffic, the number of passengers carried in 1938, the last full pre-war year, was 760 million. Electric power used during 1941 was 850,000 kilowatthours, against 1,012 kwh. in 1938. By the end of 1941 there 178 route kilometres in operation, and 285 stations open.

■■■■

Brazil's New Currency

On November 1, a new currency unit, the cruzeiro, has replaced the Brazilian milreis. Although it has only just become currency, the cruzeiro has been in the offing since 1926, when it was created by a decree issued by President Washington Luis. According to that decree, the cruzeiro was to have been equal to four paper milreis, but the final stage of that particular law was not put into effect. A good many new financial regulations have been made necessary because of Brazil's entry into the war, and President Vargas has taken the opportunity to introduce the cruzeiro into the everyday currency of the country. As now established, it is to have the same value as the milreis, that is, slightly less than 3d. There will be little regret at the passing of the milreis, for of the many monetary vicissitudes which have been suffered by the South American republics, Brazil has had its full share. It is many years now since the milreis was valued at 27d.; its fixed value before the outbreak of war in 1914 was 15d. and in the first ten years after the end of that war the milreis varied in value from 14¾d. to 5½d. In the last ten years the milreis has been worth less than 4d. The present indications are that the international buying power of Brazilian currency will improve. The improving railway receipts of Brazil are an indication of the improved economic condition of the country, and of the cruzeiro it may at least be said that it makes its appearance at a time when optimism as to the future of Brazil is greater than it has been for years.

■■■■

Maximum Locomotive Utilisation

That the steam locomotive has been taking a new lease of life in recent years is a self-evident fact to all observers of the trend of events in the locomotive world. Doubtless the competition of electric and diesel-electric power has stirred steam locomotive designers to a fresh exploration of the possibilities of propulsion by steam, but apart from that, war conditions have forced on railway managements an intensive use of locomotive stock that is probably without precedent. In both directions the results have proved surprisingly fruitful. It is in the continuous utilisation of steam locomotives that the greatest advances perhaps have been made. A 48-hr. check some years ago on the movements of all the locomotives in the stock of an American railway, apart from those under repair, showed that of a total of 16,470 locomotive hours, 33·2 per cent. were productive, 30·4 per cent. were at the shed, and 36·4 per cent. were spent in steam awaiting duties. Yet experiments on the Frisco lines as far back as 1929 and 1930 had shown that locomotives could be kept in steam continuously for periods of 25 to 30 days between inspections, and in 1926 a Northern Pacific locomotive ran for 109½ hr. continuously attached to the same train. Knowledge so gained is at last being applied. On twenty of the Class 1 railways in the United States by October last the average daily mileage of all freight locomotives had risen to 100, and the highest of the twenty showed 151½ miles; by April last twenty-seven railways had raised their all-round average to 100 miles and over, and one railway had reached an average of 172 miles a day for the whole of its freight locomotive stock. The secret of such maximum utilisation thus lies in the rostering far more than in the ability of the locomotive to undertake these more intensive duties.

First Class Travel

ONE of the most controversial railway issues which has exercised the minds of the public, and which continues to do so, is the desirability of abolishing first class accommodation. The suggestion that travellers should have available only one class of accommodation, of course, is not new. Indeed, the trend of practice in this country has been towards it. Second class travel has been abolished on all lines; on the London Passenger Transport Board's network of underground railways there is no class distinction, and rather more than a year ago first class tickets ceased to be sold on a very large number of trains covering a wide area around London. On the other hand, it has been suggested that of what may be called normal travellers at the present time—that is to say persons who are not members of the services or engaged otherwise on Government business—a larger proportion are buying first class tickets. There is no doubt that the very crowded state of most trains and the conditions of considerable discomfort which all too frequently have to be borne in undertaking long-distance travel at the present time, are in large part responsible for this development. The fact that first class carriages are often no less crowded than are their third class counterparts in the same train, and that often enough there is a considerable influx of those who hold lower-class tickets into the higher-class accommodation, does not detract from the fact that even in wartime one may hope for slightly more comfortable travel if possessing a first class ticket.

Suggestions for the abolition of first class travel have been made over many years, and are by no means confined to those who now sponsor them and who link them with the war. As long ago as our July 12, 1935, issue, we published a detailed analysis of the results to the railway companies of abolishing first class travel. Because of the interest which is now being taken in the question of the abolition of classes on passenger trains we reprint that article on page 442. It is necessary, of course, to bear in mind some of the changes which have taken place since that article was written, when considering the conclusions that are arrived at in it. The author of the article concluded that the direct loss in revenue would be £2,766,154 a year, and that total economies would not amount to more than £1,000,000 a year. Of the economies he estimated about £250,000,000 as a saving in coal. In present circumstances, of course, this saving would not be made, because trains are now so crowded that there is no waste space in first class carriages, and it is unlikely that any reduction would be effected in the weight of trains. Furthermore, because of the very considerable reduction in first class travel facilities which has been made already, the financial saving which would be effected would necessarily be very slight, if, indeed, any could be achieved. Nevertheless, the analysis is of interest as indicating some of the factors which have to be taken into account in any discussion which concerns the abolishing of classes of travel.

Passenger Transport Facilities

ALTHOUGH the title "Passenger Transport Facilities" has been given to the recently-issued fifteenth report from the Select Committee on National Expenditure, Session 1941-42, the report is, in fact, concerned almost entirely with road transport. It may be recalled that the Select Committee was appointed to examine the current expenditure defrayed out of monies provided by Parliament for the Defence Services, for Civil Defence, and for other services directly connected with the war, and is required to report what, if any, economies consistent with the execution of the policy decided upon by the Government may be effected therein. In its present report it states that for more than a year complaints have been received from all sides about the inadequacy of the passenger transport services provided to take workers to and from factories, and that bad transport is one of the main causes advanced in evidence by representatives of both management and workers in Royal Ordnance factories for absenteeism and lost time. Here again, although the phrase is not qualified, the reference to "bad transport" is by implication to be applied exclusively to road transport. The subject has been considered by the Select Committee and reported upon earlier, but in view of further evidence it was decided to make a special investigation into the problem from the side of Ministry of War Transport and the transport undertakings. Evidence was accordingly taken from the various associations of transport undertakings, from the Transport & General Workers' Union, from the Ministries of War Transport, Supply, and Labour, and from the Home Office. It would appear that every witness stressed the fact that at the present time it would be difficult to say that there was any service running which was not essential.

Despite improvements during the past few months, the committee contends that transport facilities still fall short of requirements, and it holds the view that even now the vital importance of transport is not fully appreciated when questions of priority of labour and materials come up for decision. Shortage of labour provides an acute problem, and all bus undertakings are seeking skilled workmen for the repair and maintenance of their vehicles. This position is likely to deteriorate as the average age of vehicles increases and replacements become impossible. At present the labour supply on the mechanical side is being aided by the transfer of personnel from private garages which have become redundant because of the abolition of the basic petrol ration, and by the recruitment of women for semi-skilled work. On the operating staffs, conductresses are filling the gap, but some employers are experiencing with them a high percentage of absenteeism, rising during the winter months as high as 30 per cent. in certain districts. We may remark that the experience quoted by this committee, and its average figures, suffer from the limitation that they represent the average position over the whole country. Individual operators have had greatly varying experiences, and it is not unlikely that those who have had the least satisfactory results from the employment of conductresses could do much to improve the position by giving more consideration to the main causes of absenteeism and unwilling work. Consideration for staffs, and special thought for the particular problems associated with the employment of women, have proved their worth with many transport undertakings, and the absence of such refinements probably accounts more than is generally realised for the difficulties which some transport employers are experiencing. The committee recommends that an enquiry should be begun immediately to discover the reasons for bad time-keeping and waste of woman power, so that remedial action can be taken, and it is to be hoped that full evidence will be taken from those with experience of the successful solution of such problems. Another major problem of the road transport undertakings is the lack of new buses, particularly double deckers. Before the war some 6,000 new buses were placed into service annually throughout the country, of which 1,500 to 1,800 were double deckers. During the first three years of the war the industry received only 1,100 to 1,200, instead of its normal expectation of roundly 5,000 double deckers. Arrangements have now been made to provide new capacity for the production of double deck buses (depleted by war demands) and it is hoped that about 50 per cent. of the normal supply will be available next year. Meanwhile, the Ministry of Supply has arranged for the production of considerable numbers of light single deckers with a carrying capacity of 32 passengers, but these are not entirely satisfactory as they are said to be insufficiently robust to withstand the heavy strain imposed upon them, and the labour situation makes it increasingly difficult to man large fleets of single deckers, which involve the same staff per vehicle as double deckers, but afford little more than half the carrying capacity. The committee reports that the situation regarding the supply of spare parts, which at one time was a cause of considerable trouble, is now much easier. So far, no essential bus service has had to be curtailed owing to lack of fuel, and the appropriate Regional Transport Commissioner has only to be satisfied about the necessity for a service for him to issue the permit. There is a slight anomaly in that petrol for buses is issued by the Transport Commissioner, whereas petrol for maintenance vehicles has to be obtained from the Petroleum Officer. The committee recommends that permits for fuel for all vehicles in any undertaking should be issued from the same source, so as to avoid unneecssary complication. As may be expected, the committee recommends further staggering of factory and shop hours, and suggests that factories should be grouped roughly according to the priority of their products so that some attempt may be made to allot the best times to the most important factories. It is probably not generally realised that in certain areas from 30 to 50 per cent. more passengers were carried by bus in 1941 than in 1938; indeed, some undertakings show an increase as high as 80 per cent.

The committee expresses the view that there is a general tendency for passengers to prefer to travel by bus rather than by train, where both services are available, even if the fares are the same. The suggested reason is that the bus may put the worker down at the factory gates, whereas he may have to walk a little way from the station. In view of the great strain placed on the buses, and particularly of the urgent need to economise in petrol and tyres, the committee states that it is essential for more traffic to be diverted to the railways, and it recommends that propaganda should be used extensively to impress upon the travelling public the vital importance of this. The committee recommends, further, that, where there are adequate railway facilities for any particular factory or group of factories, special bus facilities should not be provided, and it says that if the reasons for this step were fully and clearly explained, there is little doubt that many workers would be more willing to use trains rather than buses.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

St. Pancras-Mansion House Service

60a, Green Lane,
Northwood, Middlesex
October 24

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It seems clear that in spite of the ambiguous heading to the timetable, Midland trains did not run to Mansion House but only between St. Pancras and Earls Court. *Bradshaw* of July, 1878, almost the first issue to contain the new service, shows no less than fifteen trains each way on weekdays connecting Mansion House with St. Pancras. The first two, 7.13 and 8.13 a.m., and the last, 10.43 p.m. *ex* Mansion House were Outer Circle L.N.W.R. trains to Broad Street, and the other twelve were either, like these, L.N.W.R. trains or Metropolitan District trains to Richmond or Hammersmith, all of course calling at Earls Court. The Mansion House departure times in the Metropolitan District and Outer Circle timetables printed in *Bradshaw* can be referred to in corroboration.

Further evidence that the Midland passenger trains terminated at Earls Court is found in the note in Airey's Railway Map of London and its suburbs (1881 edition) under "Running powers and working arrangements" as follow: "Midland Ry. over Metropolitan District from Studland Road Junc. to Earls Court and Kensington High Street station." The map shows a Midland Ry. coal depot and sidings at the latter station. Studland Road Junc. was the point at which the District Company's line (opened 1877) to its own station at Hammersmith left the L.S.W.R. line from Turnham Green over which Midland trains got access from their own system by Acton Wells.

Yours faithfully,
REGINALD B. FELLOWS

London, W.C.1
October 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—There can be little doubt that Mr. G. A. Sekon is correct in his contention (published in the October 23 issue, page 389) that Midland Railway trains never in fact penetrated to the Mansion House Station on the District Railway.

I have fairly comprehensive records of the various services of the main-line railway companies which, in the days of steam operation, ran over portions of the District Railway and the Metropolitan Railway. According to my notes the Midland Railway service extended from St. Pancras to Earls Court only; was begun on May 1, 1878; and was withdrawn on September 30, 1880.

On the other hand, the London & North Western Railway began to work through to the Mansion House (on weekdays only) on February 1, 1872. A Sunday service from the L.N.W.R., to Earls Court only, was begun on February 5, 1905, and extended to the Mansion House on May 6, 1906. Meanwhile, all L.N.W.R. trains had been hauled electrically east of Earls Court from December 4, 1905. These services were curtailed at Earls Court on January 1, 1909.

The other company authorised to run its services over the District Railway to the Mansion House—namely the G.W.R.—instituted its Middle Circle service to the Mansion House on August 1, 1872. This was curtailed on July 1, 1900, then terminating at Earls Court, and the service was withdrawn on January 31, 1905.

Yours faithfully,
CHARLES E. LEE

West Cumberland Train Services

Workington Iron & Steel Co. Ltd.,
Moss Bay,
Workington
October 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Some years ago you published a letter from a correspondent concerning the then distressed areas of West Cumberland, which were being made to suffer even more by the chronic badness of the connections at Carlisle. West Cumberland is no longer classified as a distressed area, but, despite all the timetable changes that have taken place in the intervening years, the Carlisle connections remain as distressful as ever. As an example, a passenger from Yorkshire or the Midlands by the morning train reaching Carlisle at 1.42 p.m. finds that the West Cumberland train has left at 1.20 p.m., and thus has to wait until 4.15 p.m. for the next and is unable to transact any business that day. If he comes by the afternoon service he reaches Carlisle at 6.31 p.m., missing the 6.18 p.m. to the West by 13 minutes, and he has then to wait until 9 p.m. Alternatively, if a business man comes down from London by the 10 a.m. express, arriving Carlisle at 4.24 p.m., he is marooned for two hours by having missed the 4.15 p.m. train to West Cumberland. There are many who are concerned with essential work who are compelled to travel today and these must waste time which can ill be spared.

One factor which may influence the position is that the Carlisle—Workington—Whitehaven—Barrow—Carnforth service is largely regarded as one through unit, with the result that if connections at one end of the route are to be maintained, those at the other end are likely to suffer. The logical solution would appear to be the separation of the Carlisle—Whitehaven service, in large measure, from that operating between Whitehaven and Carnforth.

Also, several of the trains mentioned above could, if started later from Carlisle to assure these connections, pick up much of the difference in time *en route* by missing out certain intermediate stops, many of which have a reasonably satisfactory bus service. The passengers alighting and joining at these stations often number only one to three all told, and such stops seem, in present conditions, an unjustifiable waste of time and fuel.

On the North side of the Solway some quite ruthless measures were adopted recently in excising stops on the main line between Carlisle, Annan, and Dumfries, and it is difficult to see why similar measures cannot be taken on the South side.

Another beneficial change to West Cumberland would be by the simple expedient of stopping the 10.5 a.m. train from Euston to Perth at Penrith, which, by connecting with the 4.53 p.m. train from Penrith, would give an acceleration of 72 minutes from London and the West Midlands to Keswick, and 66 minutes to Workington.

Yours faithfully,
LANGTON HIGHTON,
Director & General Manager

[We understand that the question of the train services in the West Cumberland Area and connections to and from that area have been under consideration by the railway company for some considerable time, and certain improvements within the area have already been effected. The question of the possibility of effecting further improvements is still under consideration.—ED. *R.G.*]

What Constitutes the Block Section?

53, Long Deacon Road,
Chingford, E.4
October 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I think there is another point of view as to the accepted definitions of, and desirability of new terms to describe, a Block Instrument Section and a section between stop signals controlled from one box, which latter section your Edinburgh correspondent is presumably referring to in his letter of September 15 when he uses the term "Track Block Section." The term "Block Instrument Section" shown in B.S.I. No. 719 is defined as a block section extending from the last stop signal of one box to the first stop signal controlled from the box ahead, and this is 100 per cent. correct. If any proof is wanted, surely the title of Block Regulation 5, "*Section clear* but station or junction blocked" supplies it.

The incidence of the "blocking back inside home signal" signal or its equivalent (not clearing the block indicator for a passing train until the overlap is clear), does, however, require the use of the block indicator after it has performed its primary function, to show then the state of the overlap at the box ahead, but only under certain conditions, that is, for obstructions *standing* within the overlap and not for *moving* obstructions. This latter conditional and obviously secondary use of the block instrument is in the nature of a compromise, the justification for which rests on the greater duration risk and usually absence of interlocking protection attending a standing obstruction as compared with a moving obstruction. In effect the application of the block instrument is then transferred from the block instrument section to the overlap if the circumstances require it, but this does not alter the fact that the "Block Instrument Section" is as defined above and is always controlled by the block instrument, whereas the overlap is not always so controlled and therefore cannot be regarded as part of the Block Instrument Section.

So far as the description of this kind of section is concerned, it is difficult to see in what way "telegraph block section" is any improvement.

In regard to "Track Block Section," would not this term be liable to be interpreted as a trackcircuited block section? "Station Limit Section" would seem to have more merit and incidentally conform to B.S.I. No. 719.

Yours faithfully,
B. WAGENRIEDER

The Scrap Heap

In ten months bus workers employed by the London Passenger Transport Board have contributed £7,240 to the Red Cross Penny-a-Week Fund.

* * *

POLICE-STATION HOTEL

Police cells are used to accommodate people who arrive late at night at Wick, Caithness, where the house shortage is acute.—*From "The Sunday Express."*

* * *

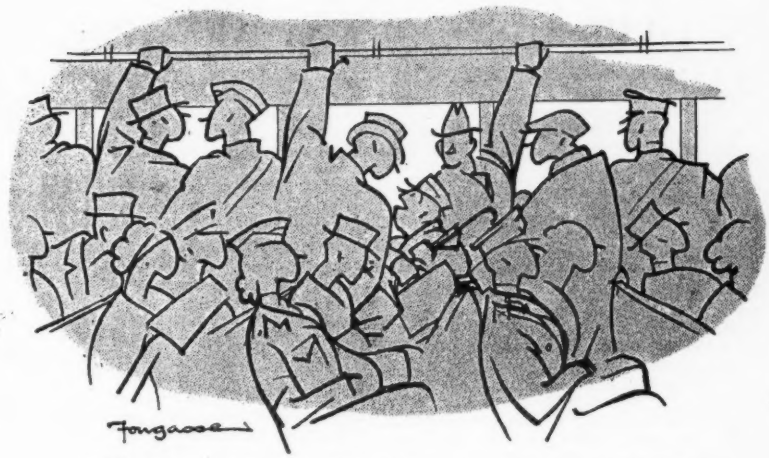
RESOLD USED RAILWAY TICKETS

Sentence of six months' imprisonment was passed at North London court recently on a ticket collector and a booking clerk. They pleaded guilty to nine charges of stealing sums ranging from 3d. to 9d., the money of their employers, the London Passenger Transport Board.

Mr. Derek Curtis Bennett, for the Transport Board, said the former had been putting aside a number of tickets given up at Old Street by passengers from Finsbury Park and handing them over to the latter defendant, who had taken the tickets back to Finsbury Park and re-sold them during his next period of duty the same day. According to a statement made by one of the men, they had divided the money so obtained on a fifty-fifty basis. It had been going on for three months, and they had had between £25 and £30 each.

* * *

A Northern railwayman confirms an increase in first class railway bookings. Many stations, he tells me, are now issuing from three to four times as many first class tickets as compared with the pre-war period. The main reason, he says, is the restricted services and consequent overcrowding of third class accommodation. But there are other reasons. Many firms' representatives now travel by train instead of car. The majority either book first class commercial travellers' cheap tickets or are granted first class travel by their firms under what is known as the bulk travel arrangement. Romance also plays its part in the increase, for most honeymooners now seem to believe in a first class start to married life.—*From "The Yorkshire Post."*



"Would you let me pass, Sir—I want to get out two stops ago"

[Reproduced by permission of the Proprietors of "Punch"

In the year before the outbreak of war approximately 900,000 meals were served in Canadian National Railways dining cars. In 1941 military and civilian travellers required the serving of over 2,369,000 meals, and records for the first part of 1942 show that that number will be exceeded this year. There are 177 units of Canadian National rolling stock equipped for the service of meals, including long-table dining cars and kitchen cars used on troop trains. To prepare and serve meals a staff of more than a thousand stewards, cooks, and waiters are employed.

NIGHT TRAIN

It was nearly two years ago, when the Luftwaffe was making things unpleasant through the winter nights, that I had occasion to travel from the North to the West of England, just before Christmas. At a station in a much-bombed "Midland town" we waited, many deep, on a darkened platform. "All lights down," boomed a loud-speaker voice; the sirens wailed, the guns spoke up, and the station became pitch-black. In came a train, and while those behind cried "Gloucester?" and those before called "Bath?" we were all swept into it in a struggling mass. Four officers in a first-class compartment denied all knowledge of the train's destination. I felt that this was carrying careful talk too far, but as we stood crammed in the darkness of the corridor a friendly voice told me that the train did go to Westchester, which was my target. The voice belonged to a soldier called Jim, whose rifle was sticking into my back and continued to do so for the next four hours. So we all stood, packed to suffocation, kit-bags and suitcases piled upon our feet, smothered in darkness, while the guns barked and the 'planes hummed overhead.—*Mary Crozier in "The Manchester Guardian."*

* * *

The Salford Stipendiary Magistrate, Mr. F. Bancroft Turner, on October 27 dismissed a summons against a munitions worker who admitted that he had travelled first class on a workman's ticket not only without permission from railway officials but in defiance of their instructions. Mr. G. Hinchcliffe, for the defendant, said that he had never intended avoiding payment of his fare, but thought he was entitled as a right to travel first class when the train was full. The Magistrate said that he agreed there was no intention to defraud. He thought the basis of the trouble was that people who travelled on workmen's trains did not think there ought to be class distinction in railway carriages.

* * *

TAILPIECE

The practice of treating railway wagons as warehouses is being discouraged.

The function of a wagon, as
all should be aware,
Is just to carry this and that
to places here and there.
Its plain but honest body no
other use conceals.
A wagon is a thing designed for
going—hence the wheels.
A wagon is not static in its
purpose or intent;
It is not given wheels and
things for fun or ornament.
It runs obedient in the wake
of engines fast or slow,
A mobile and capacious thing—
but not a warehouse, no!

E. C.

Some tickets from the collection of Mr. William B. Stocks

Above (left): French National Railways; (right): Hedjaz Railway, Syria
Below (left): Kenya & Uganda Railways & Harbours; (right): Piræus, Athens & Peloponnesus Railway, Greece

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Railway Conference

After the Prime Minister of Southern Rhodesia (Sir Godfrey Huggins) had promised to use his best endeavours to bring about an amicable settlement of the questions outstanding between the Rhodesian Railway Workers Union and the Rhodesia Railways, a conference was held in Salisbury between the Governments of the two Rhodesias, the railway administration, and the union; and it was decided that a tribunal should be set up, consisting of a chairman acceptable to all parties, two members to be appointed by the respective Governments, two representatives nominated by the Railway Workers Union, and two by the railway administration.

UNITED STATES

Rail Substitutes for Sea Routes

Some remarkable expedients are being adopted by American railways to distribute over as many alternative routes as possible the freight traffic formerly carried by coastal shipping along the Atlantic and Pacific seaboards of the United States, and also to and from Central and South American ports. Reference has been made in previous issues of THE RAILWAY GAZETTE to the successful handling by the railways of oil traffic between the oilfields of Texas, Oklahoma, and other south-eastern states, and ports on the east coast, to an extent which has increased from 11,250 to over 800,000 barrels the daily carriage of oil by rail; and reference has been made also to the diversion to the railways of coal traffic between Virginia, Maryland, and Pennsylvania, and the north-eastern states. A new all-rail route now has been devised between the Middle West and Central America. This uses the Missouri Pacific main line as far as Laredo, Texas, on the Mexican frontier, and the National Railways of Mexico from there, through the entire length of Mexico to Suchiate, on the south coast of the state of Chiapas. From here the freight is transported by ferry across the Suchiate River and thence by lorry to Ayutla, Guatemala, where the narrow-gauge system of the International Railways of Central America is reached. This gives direct access to British Honduras, the Republic of Honduras, and El Salvador, as well as to Guatemala. Limited handling facilities at present restrict the weight of individual packages to 200 lb., but, to avoid the ferrying and cartage entailed by the Suchiate River gap, the International Railways of Mexico are completing a bridge which will give direct rail communication, both standard- and narrow-gauge, between Suchiate and Ayutla; this will cut the handling to a single transhipment between the two gauges, and will economise time.

Increased Export Freight

Although coastwise shipping is decreasing, export freight is increasing considerably. In July, for example, wagons of export freight, other than grain or coal, conveyed by the railways to Atlantic, Pacific, or Gulf of Mexico ports totalled 72,102, an increase of 31 per cent. as compared with July, 1941, when the corresponding figure was 54,982. On the other hand, wagons of grain totalled only 2,319, as compared with 6,273 in 1941. Due to the admirable co-operation of the steamship lines, exporters, and shippers, there has been such efficient handling of this export freight that no congestion has been caused at any of the ports.

Accidents at Level Crossings

Fatalities caused by level-crossing accidents continue to increase. According to the Bureau of Statistics of the Interstate Commerce Commission, the fatalities which occurred at railway crossings in the first six months of 1942 totalled 982, as compared with 885 in the corresponding period of 1941—an increase of 107. Similarly 2,416 persons were injured, as compared with 2,222 in the previous year, an increase of 194. In the month of June alone the number of fatal accidents at crossings of railways and highways was 120, which was 3 less than in 1941, and the total number of injuries, 259, was also less than the 272 of 1941.

Railway Staffs at Record Level

It is hardly surprising that the continued expansion of railway traffic in war conditions in the United States is requiring constant additions to be made to the railway staffs. The total number of railway employees in mid-July (1,316,365) was the highest on record and shows a growth of 10·8 per cent. in the past year. The number of executives, officials, and staff assistants increased by 6·3 per cent.; professional, clerical, and general staff by 13·2 per cent.; staff engaged in maintenance of way and structures by 11·2 per cent., and of equipment and stores by 9·9 per cent.; and transportation staff by 12·3 per cent. in locomotive and train manning, 11·6 per cent. in engine-shed and yard service, and 6·6 per cent. in other categories.

ARGENTINA

Argentina-Bolivia Railway

Work was commenced on the first section of the projected railway between Yacuiba, on the frontier, and Santa Cruz de la Sierra, provided for in the commercial treaty recently concluded between Argentina and Bolivia (see THE RAILWAY GAZETTE of May 8, 1942) on September 18. The ceremony of driving two gold spikes into the first sleeper was performed by the Argentine Minister of Foreign Affairs, Dr. Ruiz Guiñazú, and the Bolivian Minister of Public Works, General Julio Sanjinez, in the presence of the respective Presidents of the two Republics, Dr. Ramón Castillo and General Peñaranda. The ceremony formed part of the programme of official functions arranged in connection with the visit to Bolivia of President Castillo.

Oil Pipe-Line Completed

The international oil pipe-line between Bermejo and Oran, the laying of which also was provided for in the commercial treaty, has been completed, and pumping operations have started. The work, which was finished in 20 days, was accelerated by utilising part of the Standard Oil Company's pipe-line between Agua Blanca and Manuel Elordi on the C.N.A. (State) Railway, a distance of 42 miles. In this way the length of new pipe-line laid is considerably shorter than that originally proposed.

Electric Trams hauled by Locomotive

A unique feat in Argentine railway transport was the hauling over the B.A.G.S.R. in September of a convoy of 19 electric trams from Bahia Blanca to Buenos Aires, a distance of some 440 miles. The trams, belonging to the Bahia-Blanca Electric Company, were entrusted to the railway for transportation to Buenos Aires, and to avoid the loss of time and possible damage involved in dismantling the cars for transport in wagons and reassembling them on arrival at their destination, the National Railway Board gave permission for them to be hauled to Buenos Aires by a steam locomotive. For this purpose the fenders fixed to the fronts of the cars and the overhead trolleys were removed, and special couplings and buffers were fitted. The convoy left Bahia Blanca on September 19 at 9.30 a.m., and arrived at Buenos Aires on September 23 at 5.40 p.m.

Professional Meetings

At the monthly meeting of the Argentine & River Plate Centre of the Institute of Transport, held in Buenos Aires on August 5, a paper entitled "Inland Water Transport on the River Plate" was read by Mr. A. T. Nickson, M.I.Mech.E. Mr. G. C. Bonner, Chairman of the branch, presided. The fourth meeting of the 1942 session of the River Plate Branch of the Institution of Mechanical Engineers was held in Buenos Aires on August 12, when Major R. K. Hubbard, O.B.E., Assistant General Manager, Central Argentine Railway, read a paper entitled "A Review of Gas-Turbine Development," illustrated by lantern slides and diagrams. The Chairman of the branch, Major O. Steven, M.C., presided. At the monthly meeting of the Buenos Aires Branch of the Institution of Electrical Engineers, held on August 27, Mr. E. Berry, A.M.I.E.E., delivered an address on "Cosmic Rays." Mr. R. G. Parrott, Chairman of the branch, presided. At the monthly meeting of the Buenos Aires Association of the Institution of Civil Engineers, held on August 27, Colonel R. E. M. Russell, C.V.O., C.B.E., Military Attaché to H.B.M. Embassy, delivered a lecture on "The Corps of Royal Engineers." Mr. P. W. Butler, Chairman of the branch, presided.

FRANCE

Moroccan Railways

The favourable traffic and financial results attained in 1940 by the Moroccan Railways (published in THE RAILWAY GAZETTE of January 2, page 39) were exceeded last year. The absence of other means of transport resulted in the passenger traffic being nearly doubled on four out of six lines; the number of passengers totalled about 6,200,000, or three times the yearly average before the war. As the result of a traffic tax of 25 per cent. introduced by the Sheriffian Government, passenger fares have been increased to the same extent. General goods traffic during 1941 increased by about 150 per cent. compared with that of 1938, but the conveyance of phosphates dropped by about 50 per cent. The latter development, which was noticeable already in 1940, is a result of the reduction in export activities due to present circumstances.

Working expenditure for 1940 was about the same as for the year before, but for 1941 it was about one-third as high again, due largely to higher prices of materials and increased salaries and wages; the number of personnel employed has been increased. The working surplus for 1941 amounted to fr. 178,000,000, or more than double that of 1938. A dividend of 6 per cent., same as in 1940, was paid. The interest service in respect of the 5 per cent. 1938 loan has been resumed as the result of an agreement

between the French and the Sheriffian Governments, and the normal service in respect of all other loans also is guaranteed.

Railway Difficulties

The cumulative effect of the repeated R.A.F. attacks on railway centres in France (mainly in the occupied zone) has contributed greatly to the dislocation of the country's railway services. To this must be added the German requisition of locomotives and rolling stock, not only for the conveyance of troops and materials in connection with "second-front" preparations, but also for service in the occupied areas of the Soviet Union. According to a recent announcement from Vichy, further drastic reductions in goods and passenger services are to be expected in the near future, due to increased German encroachments on France's supply of locomotives and rolling stock. Gibrat, the Vichy Minister of Communications, declared recently that, as the result of measures which have been taken to accelerate the turn-round of wagons and to secure economical use of the available loading space, the rate of turn-round of wagons has increased by about eight per cent. Measures also are under consideration for reorganising working hours to enable the maximum time to be available for loading and clearing rolling stock.

Inland Water Transport

Inland water transport is to be enlisted to an increasing extent to improve the general traffic position. French inland water transport has declined steadily since the armistice. One important cause of this is the German requisition of the engines of many vessels. The Minister of Communications announced, in his recent statement, that 150 engines now are to be returned to assist in bringing about an improvement of waterway communications (presumably in the interest of the Germans themselves). This will enable traffic to be increased by from 30 to 35 per cent. compared with a year ago. A further increase in the inland tonnage does not seem feasible at the present time, mainly because of the shortage of fuel; but improved utilisation of available craft should result in better performance. Loading and unloading times are to be shortened as much as possible. The minister maintained that satisfactory results had been achieved by sustained propaganda in favour of water transport and announced that a scheme for the co-ordination of railways and waterways is under consideration.

BELGIUM

National Railways in the First Half of 1942

During the first half of the current year 85,300,000 civilian passengers were conveyed over the system of the Belgian National Railways, an increase of more than 50 per cent. over the figures for the first six months of 1941 (54,900,000); and passenger-km. increased to 2,799,000,000 (1,723,000,000 in the first half of last year). Passenger receipts totalled fr. 507,000,000, compared with fr. 394,700,000 for the corresponding period of 1941. On the other hand, goods traffic maintained a tendency to decline, due to the country's decreasing industrial activities. A total of 1,515,000,000 *tonnes*-km. was recorded during the period under review (compared with 1,781,000,000 *tonnes*-km.). The volume of goods conveyed aggregated 18,200,000 *tonnes* and 21,000,000 *tonnes*, respectively. Goods receipts fell to fr. 586,000,000 (fr. 653,000,000). Total receipts for the period under review aggregated fr. 1,275,000,000. Expenditure amounted to fr. 1,730,000,000, and the working loss to fr. 545,000,000. Nearly half the loss is said to have accrued during the course of January and February; later on there was a comparative improvement. Free conveyance of German troops, war material, and equipment is a factor adversely affecting the financial results of the Belgian railways, and no solution to the problem has been found as yet despite the endeavours of the National Railways to reach some agreement with the occupation authorities.

SWITZERLAND

The Bodensee-Toggenburg Railway

A scheme for financial support has been arranged in order that the existence of the Bodensee-Toggenburg Railway Company may continue. This private company owns the line from Romanshorn (on Lake Constance) to Nesslau Neu St. Johan, *via* St. Gall and Wattwil, 67 km. (42 miles) long. The Swiss Federal Railways operate this line from Romanshorn to Wattwil with the adjoining section to Rapperswil as one line, and the section to Nesslau as a branch line. At Rapperswil the line connects with the Zürich-Chur main line, and also with a cross-country line to Arth Goldau, a junction on the Gotthard line. These lines all are operated electrically. At Romanshorn connection is made with passenger and goods ferries across Lake Constance to the German port of Friedrichshafen. These services, however, do not operate during the war, and this has increased the Swiss company's difficulties appreciably. When the line was built great expectations as to its traffic were held, but its operation revenues never have been sufficient to provide for a dividend on shares and, over lengthy periods, not even sufficient for meeting all interest charges on loans. The line runs through one of the most difficult parts of Switzerland, and the construction costs have been extremely heavy. A particularly bad period started in 1930, shortly after the Swiss Federal Railways declined to take over the railway, but in 1939 a Federal Law came into force providing for State aid to private railway and shipping companies which had been affected adversely by the depression, and the present arrangement has been adopted under this law, by which the company receives fr. 17,500,000; half of this amount is granted by the Treasury, against which the Government takes over fr. 2,750,000 of priority shares; the other half is provided in the form of loans by the Canton and the municipalities served by the railway. Under the existing operating arrangements with the Federal Railways the company is expected to be able to pay its way. (Swiss railway amalgamations have been mentioned in our September 4 and various preceding issues.)

ITALY

New Diesel Railcars

Fifty lightweight diesel railcars are under construction at the Milan O.M. Works (a branch of the Officine Meccaniche, of Brescia) for the Italian State Railways. They will be of the type known in Italy as "A.L. 772" and will have an all-metal body, the outside covering of which is to consist of particularly-light metal sheeting (not containing aluminium, as the latter is reserved exclusively for war purposes in Italy). The cars will be lined inside with insulating glass panels covered with plastic sheeting $\frac{1}{8}$ in. thick. Floors will be covered with linoleum and underneath there will be an insulating layer of cork to preserve the temperature. Seating will be arranged transversely, with a central passageway; the seats will be upholstered and will accommodate two persons each. Illumination will be by means of small ceiling lights. The cars will be of the low-floor type.

CEYLON

Road Transport Reorganisation

Further opposition to the plan of Mr. S. W. Nelson, Director of Transport, for the reorganisation of the passenger road-transport industry (see THE RAILWAY GAZETTE of September 25, page 294) resulted in a vote of 21 to 7 against the formation of limited-liability companies at a recent meeting of bus and lorry owners at Colombo, presided over by the Vice-President of the All-Ceylon Bus & Lorry Owners' Union. Although several members expressed the opinion that they should accept the limited-liability company scheme, even if at first it were to present individual disadvantages, the majority thought that individual personal effort would disappear once the companies were formed; they expressed the view that there would be no progress in Ceylon without competition. They felt also that they might be placed in an unfortunate position compared with the railway system. At another meeting of bus owners, held at Colombo, the Deputy-Speaker of the State Council, who presided, welcomed a proposal to form an association of bus owners with a central executive committee to make representations to the State Council and the Minister of Local Administration about their needs.

Mr. Nelson's Views

Mr. Nelson, speaking recently on his scheme, said that Ceylon deserved a modern transport system, but would never obtain it under present methods of individual ownership. He added that immediate reorganisation was vital to the war effort, and said that, if bus owners were not prepared to take the opportunity offered to them, the only feasible alternative would be for the Government to put out road services to tender under certain conditions, and ensure that persons whose tenders were accepted would compensate the displaced operators of existing services.

Mr. Nelson advocates also the setting-up of a special board, free from political interference, to control the transport services of Colombo, and a special committee of the Colombo Municipal Council has recommended that the services should be reorganised somewhat on the lines of the L.P.T.B.

Increase in Rates and Fares

Railway goods rates have been increased by 20 per cent. The issue of return tickets has been suspended (suggestions which had been made for their abolition were recorded in our September 11 issue). An increase of 33 per cent. in the price of season tickets is being considered.

Railway Thefts

Cases of theft on the railways are increasing; recently six passengers were robbed during one journey. Pickpockets are said to be taking advantage of the crowded state of the trains, and of the blackout. The aid of the police has been sought and a new Order made under the Defence Regulations renders any person stealing articles from the railways liable to corporal punishment.

Mobile Gas-Producer Units

The addition of steam as an aid to give improved engine performance

THE answer to the often asked question "does the addition of steam to a mobile gas producer give a better quality gas and an improved engine performance?" depends on (1) the kind of fuel used in the producer, (2) the type of producer considered, (3) the degree of preheat of the air and steam entering the producer, and (4) the type of gas filtration system employed.

In many statements published on the subject of wet *versus* dry blast producers there has been a tendency to ignore some of the foregoing factors, with the result that the final conclusions have not been sound. Most of these statements centre on the observation made in certain cases that although an increased proportion of hydrogen is obtained in the gas as the result of using wet blast, this is obtained at the expense of carbon monoxide, thus giving a gas of no higher *net* heating value (the *net* heating value being the lower heating value which governs the power output of the i.c. engine).

Another argument often used against the use of wet blast is that there is a tendency to carry excess moisture through to the engine, causing deterioration of the lubricating oil and reducing the volume of dry gas passing into the cylinders and hence the engine power developed.

Before proceeding it may be as well to consider the essential chemical reactions which take place in the fuel bed of the producer. With the dry-blast producer the air reacts with the fuel to give a mixture of carbon dioxide and carbon monoxide; the nitrogen contained in the air passes through unchanged. In addition to these gases, a varying proportion of hydrogen and methane are present according to the volatile matter and moisture content of the fuel; impurities in the gas include sulphuretted hydrogen and other compounds derived from the sulphur in the fuel. In the case of anthracite, the heating value of the hydrogen and methane (most of which is formed by distillation of the volatiles) forms about one third of the total heating value of the gas, but after prolonged operation when most of the volatiles have been distilled off in the fuel bed, this valuable enrichment is lost when dry-blast operation is employed. This is the main reason why the engine power falls off after a certain distance has been travelled with a dry-blast producer using anthracite as fuel.

To return to the chemical reactions whereby a mixture of carbon dioxide and carbon monoxide is formed by the interaction of the air and incandescent fuel, it is important to note that the proportion of these two gases leaving the fuel bed depends primarily on the reactivity of the fuel and the temperature of the fuel bed. High fuel-bed temperatures and high reactivity of the fuel both tend to give higher proportions of carbon monoxide, and in consequence higher heating value of the gas. When steam is added to the air entering the fuel bed, hydrogen and more carbon dioxide and carbon monoxide are formed; the final composition of the gas leaving the fuel bed depends as before on the reactivity of the fuel and the temperature of the bed. There is, however, an important difference between the action of steam and the action of air on the incandescent fuel, for the former takes away a considerable amount of heat and thus lowers the temperature of the bed. As the amount of steam added increases, so the temperature falls with resultant effect on the proportion of carbon dioxide and carbon monoxide produced. Thus it will easily be seen that the addition of steam changes the composition of the gas, and although at first it gives an improved quality gas, a point is reached at which further addition of steam causes deterioration unless steps are taken to prevent the progressive fall in fuel-bed temperature by some other means.

The reduction of temperature is, however, of great use in reducing clinker formation in the fuel bed and this is one of the main advantages of using wet blast with fuels containing medium or high ash contents; it is not possible, however, to use a sufficiently large proportion of steam to eliminate clinker formation altogether, as a reduction of temperature sufficient for this purpose would lead to a serious falling off in gas quality and hence engine power.

Effect of Type of Fuel

There is a wide variation in the properties of the different fuels used for mobile gas-producers; reference has already been made to the reactivity of the fuel and this property governs the ability of the fuel to react readily or otherwise with air and steam. For example, anthracite has a comparatively low capacity in this respect, and some of the more reactive fuels, such as alkali-activated coke, have a very high capacity to absorb the steam and form a high quality gas. It is also found that each fuel has its own optimum proportion of steam addition, proportions below or above this optimum value giving a poorer quality gas. To illustrate this point the following figures are given for two fuels, showing the variation of heating value of the gases formed with varying proportions of steam.

Ratio: steam/fuel	Calorific value (B.Th. U/cu.ft.)	
Fuel 1		
10	132	
20	145	
30	145	Optimum = 25 per cent.
40	142	
50	137	
Fuel 2		
10	125	
20	127	
30	133	
40	146	Optimum = 45 per cent.
50	146	
60	136	
70	130	

The optimum or critical value of the steam proportion and the variation of this value for different fuels, are two of the reasons why poor and variable results are obtained with some wet blast producers, particularly if the control of water or steam injection is not accurately controlled. With anthracite, the gas, as already explained, is variable on account of irregular distillation of the volatiles, and it is thus more difficult to keep the proportion of steam adjusted to the optimum value. On the other hand, a reactive fuel of low volatile content such as alkali-activated high-temperature coke, will take a steady high proportion of steam under suitable conditions, giving a gas of corresponding steady heating value and containing a high proportion of hydrogen and carbon monoxide.

For the purposes of this discussion the two main types of producer are the high velocity tuyere or crossdraught type and the low velocity updraught type. In the former type the fire zone is usually restricted to a comparatively small volume of the fuel bed which operates at a very high temperature often in the region of 1,600° C.; from what has already been said it will be seen that this results in a high ratio of carbon monoxide to carbon dioxide being formed close to the entry point of the air. In the case of the updraught producer the incandescent fuel extends over a larger volume of the fuel bed and the temperatures are correspondingly lower.

Taking the crossdraught type of producer first, it is readily seen that the introduction of steam results in an immediate reduction in fuel-bed temperature and in consequence causes a substantial reduction in the ratio of carbon monoxide to carbon dioxide, which offsets any increase in the heating value of the gas due to increased hydrogen contents. Because of the difficulty of providing sufficient preheat to the air and steam in this type of producer (the inlet tuyere is water cooled to prevent damage due to the very high temperatures) the temperature in the fuel bed cannot be maintained. Thus there is the probability that carbon monoxide will be replaced by hydrogen to give a gas of about the same net heating value, with the result that the engine power developed is not increased. Moreover, the fuel-bed temperature still remains well above the clinkering temperature of the ash in the fuel and little relief is obtained therefore from clinker troubles.

The usual type of crossdraught producer is thus best suited to a fuel which gives a reasonable proportion of distillation gases without the use of steam and which also has a low ash content because of clinkering difficulties.

In the case of the updraught type of producer, there is no corresponding limitation to the degree of preheat of the air and steam entering the fuel bed, and as the temperatures are already lower on account of the lower gas velocities, fuels of much higher ash contents can be used by the addition of larger proportions of preheated steam. The fuels normally used in updraught producers thus require to be more "reactive" than those which can be employed in crossdraught types, but as already noted, ash contents can also be higher provided correct proportions of steam are injected into the fuel bed. Suitable fuels for updraught producers are thus low and medium temperature cokes and alkali activated fuels, all of which may have moderately high ash contents of 5-9 per cent.

Amount of Preheat

Reference has already been made to the effect of preheat on the resultant quality of gas when using steam. Many of the reported failures to obtain improved results in respect to engine power are due to failure or inability to preheat the ingoing air and steam and thus compensate for the loss of fuel-bed temperature on which the ratio of carbon monoxide to carbon dioxide depends so critically in certain types of producer.

Theoretical considerations suggest that the ratio of steam to fuel could be increased to a far greater extent than used at the present time, with resultant improvement in gas quality and overall efficiency of the gas producer as a whole, provided sufficient preheat were employed. Further development is however required

along the lines of increased utilisation of the waste heat in the exit gases for the higher preheat of the air and steam to the producer, the limit to which is mainly fixed by the ability of materials to withstand these higher preheat temperatures.

Type of Gas Filtration System

In many filtration systems employed, particularly those developed from Continental types which used charcoal as fuel, excessive moisture in the gas leaving the producer was to be avoided, since its subsequent condensation on the fabric-type filtering materials caused immediate blockage. At the present time, however, there are several wet filtering systems which use water at some stage and which are not subject to this difficulty and the fact that water is contained in the gas as it leaves the producer in some cases actually assists in the filtering process.

Now, where steam is used in a producer, it is inevitable that the gas will contain a proportion of undecomposed steam, and it is obvious therefore that wet blast producers can only be used with filtering systems of the wet type, that is, systems which use water at some stage.

Conclusions

It will be seen from the foregoing considerations that the desirability or otherwise of using steam in mobile producers cannot be decided without reference to a number of variables. The failure to obtain improved results when using steam is often due to lack of appreciation of the fundamentals affecting gas production in small producers; the type of producer and the kind of fuel determine to a large extent whether the addition of steam will improve gas quality, the former governing the degree of preheat which is often so vital to success, and the latter the amount of steam which must be regulated to give improvement in gas quality and hence increased engine power.

For complete success with wet blast it is essential to ensure that:—

1. Well preheated air and steam only are used.
2. The ratio of steam to fuel is controlled within fairly narrow limits.
3. The fuel used is one which is suitable for "steaming."
4. The filtration system is suited to wet blast operation and is provided with means for extracting surplus water from the gas before it reaches the engine.

Given these conditions, the wet blast producer can yield gas of constant high heating value; without these conditions the results may be disappointing and show little improvement over dry blast operation.

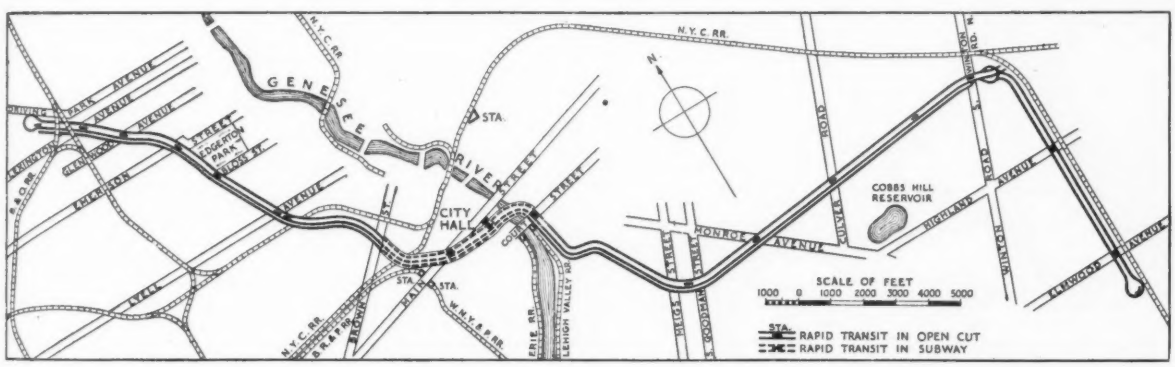
Rochester Rapid Transit, New York State

The rapid transit subway in Rochester is a high-speed electric tramway line similar in many respects to the Newark (New Jersey) subway. The Rochester line crosses the city from the General Motors plant on the north-west to Rowlands (a suburban development) on the south-east. Like the Newark subway, the line is built in the abandoned bed of an old canal, which in this instance was the Erie Canal. In the centre of the city the cars run in a subway which has been formed by roofing the canal to form a new street above. In the outlying parts of the town at each end of the line, the tracks are in an open cut. For most of its length the Rochester rapid transit line has three tracks, two of which are used for a passenger service. The third (the westernmost) is for local goods traffic and for shunting, and the stock includes an electric locomotive and a rail motor parcels van.

The passenger service is provided by cars operated at 10 to 20 min. intervals. These cars are of the regular urban-tramcar type, but are almost as large and heavy as the old-fashioned interurban cars. At peak hours multiple-unit trains of two cars are operated, but during most of the day the cars are operated singly.

At stations the platforms are placed between the two passenger tracks and the line is operated with left-hand running instead of the normal American right-hand running. The reason for this is that the cars, which are constructed for operation from one end only, have doors at the right, front, and rear. It is, therefore, necessary to run on the left-hand track to bring the doors in juxtaposition with the centre platforms. Before the Rochester city trams were replaced by buses, some of the tram lines were run into the subway at various points over single track connections which descended into the cut between the two passenger tracks. The incline and connecting tracks remain, but do not appear to be used even as berthing sidings. At one time there were also connections for various interurban electric lines entering the city, but these have been abandoned.

The construction was begun of the Rochester city subway in 1922, and after several delays, some of them political, it was opened on December 1, 1927.



Sketch map showing the Rochester rapid transit line, which traverses the centre of the city in tunnel, built in the abandoned bed of an old canal

B.S.S. FOR ELECTRICAL PROTECTIVE RELAYS.—The British Standards Institution has published a revision of B.S. 142, Electrical Protective Relays. The present revision represents a complete redraft of the specification; the previous issue (1927) had become out of date, due to advances in technique. Provisions for many new types of relay have been included, such as distance relays, open, and reverse phase-sequence relays. An attempt has been made to sub-divide the so-called instantaneous relays into classes according to their speed of operation. The requirement as to the capacity of relays to withstand sudden overloads has been extended. The range of settings which may be considered normal are given for each type. A recommended characteristic curve connecting time and current for relays having an inverse time-lag with a definite minimum has been introduced for the first time as an appendix. Thus, although at the present time this is not an obligatory feature, it is hoped, when new relays are designed, that the recommended characteristic curve should always be adopted. Copies of the specification may be obtained from the Publications Department, British Standards Institution, 28, Victoria Street, London, S.W.1, price 2s. net, post free 2s. 3d.

Would it Pay to Abolish First Class?

In this article, which is reprinted from our July 12, 1935, issue, it is contended that it would not pay the railways to abolish first class. The direct loss in revenue would be £2,766,154 a year and the total economies would not be more than £1,000,000

THE question of the abolition of classes on passenger trains is one which has been raised from time to time, and the present occasion seems opportune for reviewing the matter once again. From a statistical point of view the case for abolition seems well nigh overwhelming. Even as far back as the early 'seventies only just over 30 per cent. of the journeys made with ordinary tickets were first and second class, and in the forty years from 1871 to 1911 the percentage dropped to less than 4. The following table, which gives the number of passengers carried at intervals of 10 years from 1871 to 1911 inclusive, brings out the salient facts. It will be observed that during this period first class passengers declined by 16 per cent. and second class by no less than 71 per cent., whilst, on the other hand, third class travel increased by 399 per cent. It should be remembered that the Midland Railway Company in 1875 took the bold step of abolishing second class altogether. A few years earlier that company had begun to admit third class passengers to the whole of its trains. This forward policy caused much perturbation among the other railway companies, and it was only gradually that second class began to disappear, the Great Central following in 1892, the North Eastern in 1899, the Great Western in 1910, and the Lancashire & Yorkshire in 1911. Second class disappeared from the Scottish lines in 1894.

Before the present railway accounts and statistics came into being, information in regard to season ticket holders was meagre in the extreme. Up to 1901 not only was there no distinction shown between first, second, and third class in the annual returns issued by the Board of Trade, but the tickets were not even equated to an annual basis. The change to an annual basis started in 1902, and this had the effect of reducing the number of season tickets shown in the returns by two-thirds. A rough estimate, however, indicates that in the forty years season tickets increased by over 1,200 per cent.

If we look at the receipts we find that third class ordinary passengers contributed less than 50 per cent. of the revenue in 1871, but in 1911 the proportion had grown to over 86 per cent. These figures again exclude season ticket holders. In this same period first class receipts diminished by 13 per cent. and second class by 63 per cent., and, at the same time, third class receipts increased by 324 per cent. and season tickets by 545 per cent.

The new form of accounts and statistics which came into use in 1913 enables us to divide season ticket holders into classes. It is customary to assume that the average season ticket holder makes 600 journeys per annum, *i.e.*, a journey out and home on 300 days of the year, and on this basis the table of first, second, and third class journeys made in 1913, 1923, and 1933 has been made up. For the first time also journeys made with workmen's tickets are separately distinguished from third class. By 1933 first class journeys had fallen to less than 3½ per cent. of the total, second class to just over 1½ per cent., the remaining 95 per cent. being third class and workmen. As regards receipts, first class in 1933 contributed less than 9 per cent. of the total, and second class 1½ per cent.

Is it worth while maintaining separate accommodation for first and second class passengers whose contribution to passenger revenue is only 10 per cent. of the total?

Only three of the four main line group companies retain second class accommodation, the G.W.R. having abolished it entirely. The L.M.S.R earned only £2,063 in 1934 from second class passengers, both ordinary and season, and, presumably, retains this class only under agreement or compulsion. The Southern Railway restricts second class to its Continental services, and carries no second class season ticket holders. Its receipts from second class traffic in 1934 were £277,768. The L.N.E.R. retains second class on its Great Northern and Great Eastern suburban services, and more than four-fifths of its second class revenue is from season ticket holders. The total is just over £500,000 or 5 per cent. of the total L.N.E.R. passenger traffic.

If we look at the number of seats (or berths) provided by the four companies in relation to the journeys made we find the average annual numbers of passengers per seat in 1934 to be as follow:—

First class ...	146	Third class ...	532
Second class	440	All classes ...	481

This calculation is again on the assumption that season ticket holders make 600 journeys per annum.

The G.W.R. seems to be the most lavish in providing first class accommodation, the average number of passengers per seat being only 82, as against 124 on the L.M.S.R., 152 on the L.N.E.R., and 213 on the Southern.

In second class the L.M.S.R. carries in the course of the year 153 passengers per seat, the L.N.E.R. 446, and the Southern no fewer than 969. The last named company has reduced its number of second class seats to 387.

In third class the average number of passengers per seat is very similar in the case of three of the companies, L.M.S.R. 442, L.N.E.R. 450, and G.W.R. 473, but the Southern average is more than double that of any of the other companies, namely, 989.

If we look at the average earnings per annum per seat provided we find that first class does not yield so much as third, and there is a great fluctuation in the figures for second class, ranging from £1·25 on the L.M.S.R. to £10·87 on the L.N.E.R., and £717·75 on the Southern Railway. Having regard to the fact that third class accommodation is cheaper to provide than either first or second class it is clear that greater profits are made by the railway companies from a third class passenger than from a first class passenger for the same length of journey.

One other set of figures should perhaps be looked at, namely, those relating to passenger-miles which are taken out by the railway companies from time to time, usually in the month of September, which is generally regarded as a typical average month for the year. The following table gives particulars in respect of each class for 1924 and 1934 showing Journeys, Passenger-Miles, Average Distance per Journey, Receipts, and Receipts per Journey and per Passenger-Mile. It will be observed that in the ten years interval first class passenger-miles have fallen by nearly 50 per cent. and second class by 33 per cent., whilst third class have not declined by as much as 2 per cent. In all classes the average distance travelled per journey has increased very largely, due no doubt to the diversion to

PASSENGERS CARRIED ON RAILWAYS IN GREAT BRITAIN

Year	First class (thousands)	Per cent. of total	Second class (thousands)	Per cent. of Total	Third class and Parliamentary (thousands)	Per cent. of total	Total (thousands)	Season tickets (number)
1871	34 523	9·58	76,698	21·27	249,281	69·15	360,502	170,817
1881	36,318	6·00	60,453	9·98	508,633	84·02	605,404	516,000
1891	28,910	3·51	59,182	7·19	735,168	89·30	823,260	1,375,000
1901	33,199	2·90	65,227	5·69	1,047,115	91·41	1,145,541	1,844,000
1911	28,834	2·23	22,573	1·74	1,244,095	96·03	1,295,502	767,774

RECEIPTS FROM PASSENGERS CARRIED ON RAILWAYS IN GREAT BRITAIN

Year	First class £ (thousands)	Per cent. of total	Second class £ (thousands)	Per cent. of total	Third class and Parliamentary £ (thousands)	Per cent. of total	Total £ (thousands)	Season tickets £ (thousands)	Total ordinary and season £ (thousands)
1871	3,884	23·70	4,864	29·67	7,644	46·63	16,392	749	17,141
1881	3,569	16·76	3,099	14·54	14,634	68·70	21,302	1,458	22,760
1891	2,970	11·35	2,218	8·47	20,985	80·18	26,173	2,373	28,546
1901	3,355	9·86	2,863	8·41	27,815	81·73	34,033	3,503	37,536
1911	3,370	8·97	1,810	4·82	32,395	86·21	37,575	4,834	42,409

PASSENGERS CARRIED ON RAILWAYS OF GREAT BRITAIN, 1913, 1923, AND 1933

	1913	1923	1933
First Class			
Ordinary ...	25,441,787	21,470,300	12,593,469
Season* ...	62,770,800	79,755,600	37,301,400
Total ...	88,212,587	101,225,900	49,894,869
Second Class			
Ordinary ...	10,256,647	4,055,268	1,649,955
Season* ...	46,289,400	44,295,000	20,221,200
Total ...	56,546,047	48,350,268	21,871,155
Third Class			
Ordinary ...	911,356,950	899,739,450	743,331,829
Workmen ...	255,882,237	310,301,402	259,471,771
Season* ...	241,629,000	412,150,200	362,826,000
Total ...	1,408,868,187	1,622,191,052	1,365,629,600
All Classes			
Ordinary ...	947,055,384	925,265,018	757,575,253
Workmen ...	255,882,237	310,301,402	259,471,771
Season* ...	350,689,200	536,200,800	420,348,600
Total ...	1,553,626,821	1,771,767,220	1,437,395,624

* Season tickets equated on basis of 600 journeys per annum

PERCENTAGE OF TOTAL

First Class			
Ordinary ...	1·64	1·21	0·88
Season ...	4·04	4·55	2·60
Total ...	5·68	5·76	3·48
Second Class			
Ordinary ...	0·66	0·23	0·11
Season ...	2·98	2·51	1·41
Total ...	3·64	2·74	1·52
Third Class			
Ordinary ...	58·66	50·78	51·71
Workmen ...	16·47	17·51	18·05
Season ...	15·55	23·21	25·24
Total ...	90·68	91·50	95·00

RECEIPTS FROM PASSENGERS CARRIED ON RAILWAYS OF GREAT BRITAIN, 1913, 1923, AND 1933

	1913	1923	1933
	£	£	£
First Class			
Ordinary ...	3,629,548	5,393,696	3,064,658
Season ...	1,657,285	3,493,195	1,735,587
Total ...	5,286,833	8,886,891	4,800,245
Second Class			
Ordinary ...	903,119	633,629	363,581
Season ...	583,559	910,795	398,557
Total ...	1,486,678	1,544,424	762,138
Third Class			
Ordinary ...	34,316,299	55,190,949	38,989,090
Workmen ...	1,665,371	4,112,119	3,484,707
Season ...	2,532,621	7,263,377	6,441,700
Total	38,514,291	66,566,445	48,915,497
All Classes			
Ordinary ...	38,848,966	61,218,274	42,417,329
Workmen ...	1,665,371	4,112,119	3,484,707
Season ...	4,773,465	11,667,367	8,575,844
Total ...	45,287,802	76,997,760	54,477,880

PERCENTAGE OF TOTAL

First Class			
Ordinary ...	8·01	7·01	5·62
Season ...	3·66	4·54	3·19
Total ...	11·67	11·55	8·81
Second Class			
Ordinary ...	1·99	0·82	0·67
Season ...	1·29	1·18	0·73
Total ...	3·28	2·00	1·40
Third Class			
Ordinary ...	75·78	71·68	71·57
Workmen ...	3·68	5·34	6·39
Season ...	5·59	9·43	11·83
Total ...	85·05	86·45	89·79

PASSENGER RECEIPTS, FOUR GROUP RAILWAYS, 1934

	L.M.S.R.	L.N.E.R.	G.W.R.	Southern	Total
	£	£	£	£	£
First Class					
Ordinary ...	1,098,210	710,165	421,483	773,862	3,003,720
Season ...	578,935	347,004	101,526	530,901	1,558,366
Total ...	1,677,145	1,057,169	523,009	1,304,763	4,562,086
					9·02 per cent.
Second Class					
Ordinary ...	124	94,296	—	277,768	372,188
Season ...	1,939	406,548	—	—	408,487
Total ...	2,063	500,844	—	277,768	780,675
					1·55 per cent.
Third Class					
Ordinary ...	13,651,531	8,603,609	6,266,852	8,048,996	36,570,988
Season ...	1,769,966	1,000,833	494,435	2,306,685	5,571,919
Workmen ...	1,136,017	640,865	319,543	979,009	3,075,434
...					
Total ...	16,557,514	10,245,307	7,080,830	11,334,690	45,218,341
					89·43 per cent.
Gross Total	18,236,722	11,803,320	7,603,839	12,917,221	50,561,102

EARNINGS PER SEAT, FOUR GROUP RAILWAYS, 1934

	L.M.S.R.	L.N.E.R.	G.W.R.	Southern	Total
	£	£	£	£	£
First Class	12·94	13·71	13·35	18·38	14·40
Second Class ...	1·25	10·87		717·75	16·23
Third Class ...	17·58	18·25	22·68	34·75	21·11
Total ...	16·99	17·25	21·65	32·49	20·17

PASSENGERS PER SEAT, FOUR GROUP RAILWAYS, 1934

	L.M.S.R.	L.N.E.R.	G.W.R.	Southern	Total
First Class	124	152	82	213	146
Second Class ...	153	446	—	969	440
Third Class ...	442	450	473	989	532
Total ...	403	417	430	850	481

road of many short distance journeys previously performed by rail.

The payment per passenger-mile (estimated of course in the case of season tickets) has declined in all cases except in respect of second class seasons. In this case for some reason not apparent the payment has increased from 0·628d. to 0·670d. per mile. It is also to be noted that in 1934 second class passengers on the average paid a higher rate per mile than first class. Speaking broadly it may be said that at the present time both first and second class passengers pay on the average a penny a mile for railway travel and third class passengers at the rate of two thirds of a penny a mile, and that in the past ten years the cost of passenger travel has fallen by about 25 per cent., that is, from 0·903d. a mile to 0·670d.

We have now to consider the financial effects of the abolition of first and second class, that is, to compare the loss which would be sustained by the abolition of these classes with the economies which might be expected to be effected by the abolition.

First, as to the loss in revenue. This might arise in two ways :—

(1) The diversion of passengers to road ; and

(2) The payment of third class instead of a second or first class fare.

Taking the year 1933 the receipts from first class passengers amounted to £4,800,245. Let us assume that 10 per cent. would be diverted to road. This would involve a loss of £480,000. Of the remaining 90 per cent paying ordinary fares there would be a loss of $\frac{941}{1,684}$ and of the 90 per cent paying season ticket fares a loss of $\frac{123}{528}$. These two cuts in charges would amount to £1,541,227 and £363,895 respectively. Second class passengers would probably keep to rail, and the loss may be assumed to be only in respect of

PASSENGER MILES AND JOURNEYS, AVERAGE DISTANCE TRAVELLING, RECEIPTS AND RECEIPTS PER JOURNEY AND PER PASSENGER MILE ON THE RAILWAYS OF GREAT BRITAIN IN THE MONTHS OF SEPTEMBER, 1924 AND 1934

	First Class		Second Class		Third Class and Workmen		All Classes	
	1934	1924	1934	1924	1934	1924	1934	1924
Journeys								
Ordinary	1,016,894	1,824,298	140,612	266,164	75,738,907	80,404,982	76,896,413	82,495,444
Workmen	—	—	—	—	23,673,153	26,799,014	23,673,153	26,799,014
Season	3,006,827	6,223,247	1,532,981	2,403,508	31,634,478	33,225,035	36,174,286	41,851,790
Total	4,023,721	8,047,545	1,673,593	2,669,672	131,046,538	140,429,031	136,743,852	151,146,248
Passenger Miles								
Ordinary	36,970,682	55,273,310	4,057,900	6,516,890	1,297,491,526	1,356,481,357	1,338,520,108	1,418,271,557
Workmen	—	—	—	—	179,905,951	162,437,132	179,905,951	162,437,132
Season	62,721,758	122,230,121	11,524,422	16,569,889	353,415,634	343,556,493	427,661,814	482,356,503
Total	99,692,440	177,503,431	15,582,322	23,086,779	1,830,813,111	1,862,474,982	1,946,087,873	2,063,065,192
Average Distance—Miles								
Ordinary	36·36	30·30	28·86	24·48	17·13	16·87	17·41	17·19
Workmen	—	—	—	—	7·60	6·06	7·60	6·06
Season	20·86	19·64	7·52	6·89	11·17	10·34	11·82	11·53
Total	24·78	22·06	9·31	8·65	13·97	13·26	14·23	13·65
Receipts								
Ordinary	£259,384	£517,953	£32,581	£55,738	£4,018,090	£5,913,560	£4,310,055	£6,487,251
Workmen	—	—	—	—	£353,334	£355,940	£353,334	£355,940
Season	£138,071	£275,721	£32,162	£43,353	£596,718	£598,140	£766,951	£917,214
Total	£397,455	£793,674	£64,743	£99,091	£4,968,142	£6,867,640	£5,430,340	£7,760,405
Receipts per Journey								
Ordinary	5s. 1·22d.	5s. 8·14d.	4s. 7·61d.	4s. 2·26d.	1s. 0·73d.	1s. 5·65d.	1s. 1·45d.	1s. 6·87d.
Workmen	—	—	—	—	3·58d.	3·19d.	3·58d.	3·19d.
Season	11·02d.	10·63d.	5·04d.	4·33d.	4·53d.	4·32d.	5·09d.	5·26d.
Total	1s. 11·71d.	1s. 11·67d.	9·28d.	8·91d.	9·10d.	11·74d.	9·53d.	1s. 0·32d.
Receipts per Passenger Mile								
Ordinary	1·684d.	2·249d.	1·927d.	2·053d.	0·743d.	1·046d.	0·773d.	1·098d.
Workmen	—	—	—	—	0·471d.	0·526d.	0·471d.	0·526d.
Season	0·528d.	0·541d.	0·670d.	0·628d.	0·405d.	0·418d.	0·430d.	0·456d.
Total	0·957d.	1·073d.	0·997d.	1·030d.	0·651d.	0·885d.	0·670d.	0·903d.

the reduction in fare. Second class passengers paid in 1933 £762,138, and the loss in respect of ordinary traffic would be $\frac{1,184}{1,927}$ of £363,581, and in respect of season ticket traffic $\frac{265}{670}$ of £398,557, amounting to £223,394 and £157,638 respectively.

The total direct loss in revenue which might be expected would be, therefore, £2,766,154.

This loss might, however, be increased very considerably if the most influential section of the travelling public was antagonised by the abolition of first class accommodation, and it retaliated by diverting traffic from rail to road. Such diversion might have far-reaching consequences.

There would also be a demand for some kind of reserved accommodation even if first and second class carriages as such disappeared. One can hardly visualise the complete abolition of the first class sleeping car, and the experience of running Pullman trains, where supplementary charges are made, indicates that there are a good many people in this country who are willing to pay higher fares than the ordinary for the purpose of obtaining superior comfort in travel or for the privilege of exclusiveness. It is indeed a moot point as to whether the British public is prepared at the present time to rid itself of tradition and to regard all men as equally welcome as fellow travellers.

A demand for a general improvement in third class accommodation would almost inevitably be forthcoming, and this demand could hardly be resisted, having regard to the improvements which have been made in the past, and are still being made, to the third class carriages, particularly on main lines.

There is evidence that the reduction in charge for a first class travel at other than standard fares, which took effect at the beginning of this year, has been successful in encouraging a good many passengers to transfer from third to first, and it may be assumed that the retention of second class in its present limited form is justified by the results obtained.

On the other hand, there are certain definite advantages which would result from having only one class of carriage, and the point to consider is whether the economies which would accrue are likely to exceed the losses in revenue.

As a preliminary point, it might be suggested that even though there is some slight reversion to first class travel it is only temporary, and the downward tendency will in the course of time re-assert itself. As regards second class, it now remains only for London suburban and Continental traffic.

It is clear that one uniform class would make for greater simplicity both from the point of view of the railways and of the travelling public, and railway practice would be brought into line with road practice where no class distinctions are to be found in the public service vehicles. Even on the railways, there are today quite a number of branch lines which are worked wholly or partly by railcars of uniform class, and this innovation has been introduced without much demur.

Simplicity would lead to economy in innumerable ways; the difficulty is to put a money value on it. The two main economies would probably be in carriage maintenance and locomotive coal consumption due to a reduction in the weight of trains. The maintenance and renewal of carriages in 1934 cost the four main line companies £5,376,633. This figure included horseboxes, and carriage trucks, etc. The aggregate number of seats provided was 2,506,471 and the cost of maintaining each seat may be put at approximately £2 per annum. There were 316,702 first class and 48,099 second class seats. The latter would probably still be required for the second class passengers who would travel third, but assuming it were possible to abolish 75 per cent. of the first class seats, say in round figures 240,000, and that each first class seat cost £2 10s. per annum to maintain, or 25 per cent. more than the average, the total ultimate saving to be realised would be £600,000 per annum.

As regards coal consumption, the locomotive coal bill of the four group companies in 1934 was £10,276,118. Based on engine mileage about 50 per cent. of the cost may be attributed to passenger trains. Uniformity of class should reduce the average weight of trains by say 10 per cent. and assuming that this reduction would lead to a 5 per cent. reduction in coal consumption there would be a saving of approximately £250,000.

Other savings which would be likely to result are :—

Ticket inspection to prevent passengers travelling in a higher class.

Restaurant cars, waiting rooms and refreshment rooms.

Clerical labour and accountancy.

Reduction in time lost by trains having to draw up twice at stations and avoidance of necessity for lengthening platforms

Reduction in time occupied in marshalling trains.

Reduction in stocks of carriage equipment.

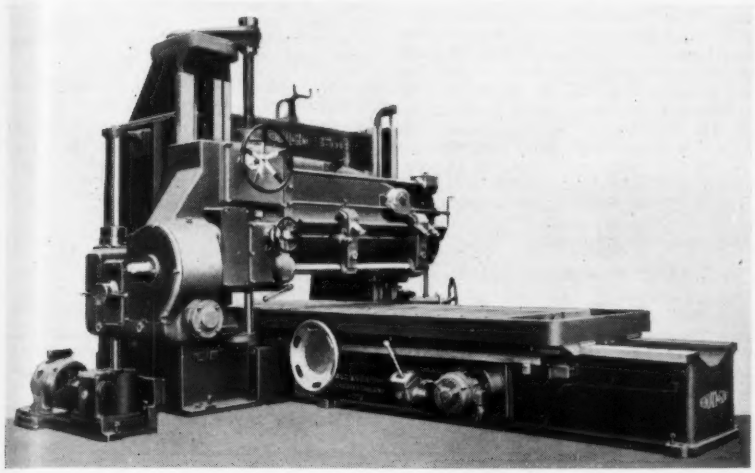
Reduction in cleaning and lighting and lubricating of vehicles.

It would be well nigh impossible to put a money sum to all these economies, but taking £150,000 as the aggregate it will be seen that the total possible economies from all sources would not be likely to amount to more than £1,000,000 per annum or hardly more than one third of the potential losses.

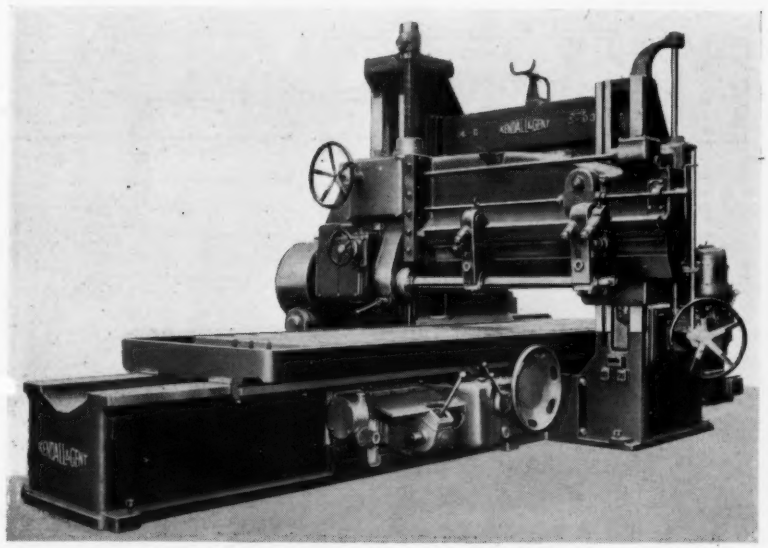
The case for the retention of first class would appear, therefore, to be stronger than that for its abolition.

An Improved Form of Milling Machine

Well adapted to machining operations in railway shops involving heavy cuts and close limits of accuracy



Left : Kendall & Gent heavy-duty horizontal Plano milling machine showing foot-mounted main and endshield table motors



Below : View of machine showing combined table control and feed box, also cross-slide elevating motor and hand motion

THE machine tool illustrated and described herewith is the Kendall & Gent heavy-duty horizontal Plano milling machine in its latest form; outstanding features are its massive lines and the ability to take really heavy cuts to close limits of accuracy without strain or effort. The machine is designed and built in accordance with scientific and well-proved lines. In cases of this sort, where the work to be performed is of a heavy character, rigidity is essential and this machine leaves nothing to be desired in this direction. The capacity of the machine illustrated is 5 ft. wide by 3 ft. deep by 14 ft. long. Cutters up to 12 in. dia. can be taken. Flat rectangular section slides, on the deep, wide, plated top bed, provide solid support to the table; this support is fully maintained as the entire bed rests on the foundation throughout its length. The table is also of deep section making it particularly rigid. It has three longitudinal tee slots cut from the solid and two sets of auxiliary side slots. The ways, as also for the bed, are chilled and force lubricated from central wells in the bed; the lubricant is filtered.

Positive variable feeds and constant rapid power traverse for setting are arranged. Eight changes from ¾-in. to 6 in. per min. are available for the former. Traversing is by large diameter worm and semi-circular rack, both of densified iron with a constant flow of oil. This method of drive is used on practically every one of the Kendall & Gent milling machines, and has proved itself immune from wear even over very long periods; the thrust is taken by ball washers. A 5-h.p. reversing motor provides the power through a worm reduction set; the gears are of nickel-chrome steel and slide on six-splined shafts. Control of the table is by means of a lever duplicated on either side of the bed for convenience of operation. This lever is directional, and to operate the table either at any of the feed rates or rapid traverse, it is merely moved in the direction in which the table is required to travel. Particular feeds are, of course, present, but rapid power is obtained immediately by alternative lever positions. Instant stopping is obtained by merely bringing the lever to the neutral position on the lever gate. Should the spindle stop for any reason, the table stops also, due to an electrical interlock between spindle and feed motors. The table can, however, be operated for setting purposes with the spindle stationary.

The uprights are of the chimney type and capable of withstanding particularly heavy stresses. They rest on the foundation and are tongued and bolted to the bed. A box section cross stay links them at the top. The massive cross slide moves on the broad upright faces. It is deep in section and absolutely deflectionless under the heaviest cut; simultaneous locking on each upright is effected by a lever with compensating mechanism to give equal locking tension. Elevation is by hand or push button controlled 5 h.p. motor; the hand adjustment is provided with a micro dial. Ample support to the large diameter spindle and arbor is provided by the spindle head bearings and two heavy auxiliary arbor supports fitted to the angular cross-slide face. The conical spindle head bearing is adjustable and is housed in a densified iron sleeve for maximum rigidity. A lateral movement of 5 in. with micro setting is provided. The auxiliary arbor supports are adjustable along the angular face by rack and pinion and locking is very efficient. The spindle itself is of heat-treated high-tensile steel, and the arbor of forged-nickel chrome air-hardening steel. The drive from the spindle to the arbor is effected by means of shrouded driving flats.

A 35 h.p. motor provides the power to the cutters through a nine change double-lever operated box and high efficiency worm and wheel reduction set. The change gears which are of nickel-chrome steel slide on six splined shafts. Speeds ranging from 15 to 53 r.p.m. are provided.

TRANS-CANADA AIR LINES.—Passenger, air mail, and express traffic showed increases during August last. The number of passengers carried totalled 9,584, an increase of 144 over that of the previous month, and of 300 over that of August, 1941. The amount of mail carried was 208,617 lb., an increase of 15,646 lb. over July, and 179,190 lb. over August last year. Express traffic totalled 38,835 lb., an increase of 5,512 lb. over July, and of 16,966 lb. over the corresponding month of 1941.

L.M.S.R. Express Locomotive with Enlarged Boiler

Modifications have resulted in increased tractive force without alteration to cylinder volume

THE locomotive illustrated herewith, one of Mr. W. A. Stanier's 4-6-0 "5xP" class, has been fitted with a larger boiler, together with double blast-pipes and chimney. Thus equipped, the engine without tender weighs 82 tons, as compared with the 84 tons 18 cwt. of the "Royal Scot" class; the adhesion weight is 61 tons 10 cwt., which is a ton less than that of the other class mentioned. The main purpose in thus altering the locomotive is to provide, within the limit allowable, an engine of increased power conforming to the weight standards on the Midland division of the L.M.S.R.

The Boilers Compared

The table given on this page, and the additional particulars shown on the drawing reproduced below indicate the differences in the engine as now fitted and the "5xP" with the original and smaller boiler. This latter had an outside diameter of 5 ft., and next to the firebox 5 ft. 8⅜ in.; its length was 12 ft. 10 1/16 in., and the centre from rail 8 ft. 11 in. The boiler pressure was 225 lb. per sq. in., and the firebox 10 ft. long outside as compared with 10 ft. 3 in. in the new boiler. In addition a single blast pipe and chimney were fitted. Apart from this, the cylinder and wheel dimensions, also the wheelbase and certain other features, remain as before; the alteration is as already indicated, the fitting of the new and larger boiler.

Tractive Effort and Weight

This has naturally had some influence on the weight of the engine, which before alteration was 79 tons 11 cwt., with 59 tons 15 cwt. available for adhesion. The tractive effort of 26,610 lb. is now increased to 29,590 lb., both calculated at 85 per cent. b.p.; this is due to the increase of boiler pressure from 225 lb. to 250 lb. per sq. in.

Improved Appearance

The locomotive as now equipped presents a very striking and handsome appearance, whilst with its added boiler power it will doubtless be able to handle to entire satisfaction loads having greater total weight than before.

The main particulars of the engine are as follow:—

Cylinders (3), dia.	17 in.
Piston stroke	26 in.
Wheels, coupled	6 ft. 9 in.
Boiler dia. at front (outs) ...	5 ft. 5 in.
,, ,, next firebox ...	5 ft. 10½ in.
,, length of barrel ...	12 ft. 11 1/16 in.
,, centre from rail ...	9 ft. 3½ in.
Heating surface, tubes—large and small	1,667 sq. ft.
Firebox	195 ,,
Total (evaporative)	1,862 ,,
Superheater	357 ,,
Combined heating surfaces...	2,219 ,,
Superheater elements ...	28—1¼ in. dia. outside.
Large tubes, 28—5⅛ in. dia. outside	13 ft. between tube-plates.
Small tubes, 198—1¾ in. dia. outside	13 ft. between tube-plates.
Grate area	31·25 sq. ft.

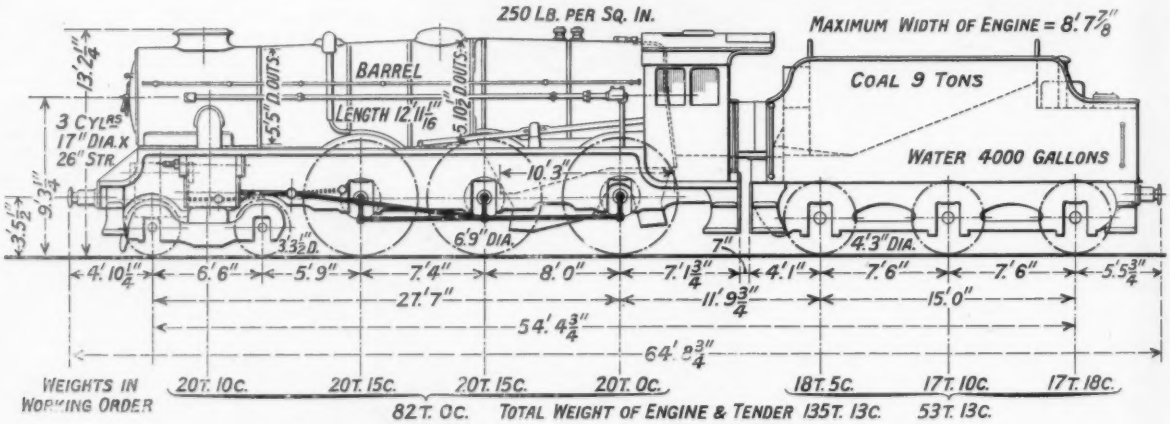
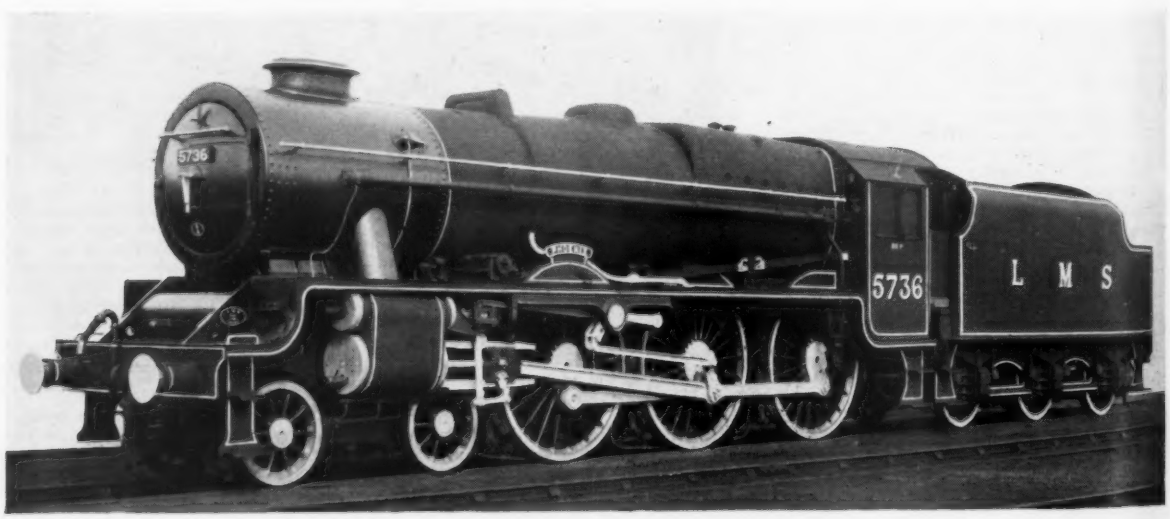

250 LB. PER SQ. IN.
MAXIMUM WIDTH OF ENGINE = 8' 7 7/8"
COAL 9 TONS
WATER 4000 GALLONS
BARREL
LENGTH 12' 11 1/16"
5'5" O.OUTS
5'10½" O.OUTS
13' 2 1/4"
3 CYLRS 17" DIA. X 26" STR.
9' 3 1/4"
3' 5 1/2"
10' 3"
3 1/2" O.D.
6'9" DIA.
4'3" DIA.
7"
4' 10 1/4" 6' 6" 5' 9" 7' 4" 8' 0" 7' 1 3/4" 4' 1" 7' 6" 7' 6" 5' 5 3/4"
27' 7"
11' 9 3/4"
15' 0"
54' 4 3/4"
64' 2 3/4"
WEIGHTS IN WORKING ORDER
20T. 10C. 20T. 15C. 20T. 15C. 20T. 0C. 18T. 5C. 17T. 10C. 17T. 18C.
82T. 0C.
TOTAL WEIGHT OF ENGINE & TENDER 135T. 13C.
53T. 13C.

Diagram showing principal dimensions and distribution of weight of engine and tender



L.M.S.R. 4-6-0 type locomotive No. 5736 of the Stanier "5xP" class fitted with enlarged (2A) boiler and double blast-pipe and chimney front end. As thus altered the engine provides a more powerful unit than originally designed and comes within the limit of weight allowable on the Midland division of the L.M.S.R.

RAILWAY NEWS SECTION

PERSONAL

L.N.E.R. Appointments

The L.N.E.R. has announced the following appointments :—

Mr. H. C. Johnson, Acting Assistant to the Superintendent (Eastern Section), Southern Area, to be Acting Assistant Superintendent (Western Section), Southern Area, in place of Mr. E. W. Rostern, who recently was appointed Acting Superintendent, Southern Area.

Mr. G. F. Fiennes, Trains Assistant to the Superintendent, North-Eastern Area, to be Acting Assistant to the Superintendent (Eastern Section), Southern Area, in place of Mr. H. C. Johnson.

Mr. H. G. Rampling, Chief Assistant to the Superintendent (Western Section), to be District Superintendent, Norwich, in succession to Mr. E. F. Greenfield, who retired at the end of September.

Mr. J. B. Dawson, District Engineer, Sheffield, to be Parliamentary & Surveying Assistant to the Engineer, Southern Area.

L.N.E.R. Accountant's Department

The L.N.E.R. announces that, consequent upon the appointment of Mr. L. C. Glenister as Chief Accountant, the following appointments have been made :—

Mr. G. Skelton, Assistant to Chief Accountant, to be Assistant Accountant.

Mr. F. H. Sedgwick, Chief Book-Keeper, to be Assistant to Chief Accountant.

Mr. T. R. Hawkes, Locomotive Accountant, Scottish Area, to be Assistant to Chief Accountant.

Mr. D. Young, Chief Staff Clerk, to be Assistant to Chief Accountant.

Mr. R. W. McEwen, Locomotive Accountant, North-Eastern Area, to be Locomotive Accountant, North-Eastern & Scottish Areas.

Mr. W. G. Cannadine, Assistant Book-Keeper, to be Chief Book-Keeper.

Mr. G. Roberts to be Assistant Book-Keeper.

Mr. G. S. Szlumper has succeeded Mr. J. C. Patteson as Director-General, Supply Services, Ministry of Supply.

We regret to record the death on October 15, at the age of 71, of Brigadier-General A. S. Cooper, C.B., C.M.G., Deputy-Chairman of the Peruvian Corporation Limited. He was educated at Marlborough College, and entered the Colonial Civil Service in 1897, from which date until 1908 he served with the then Uganda Railway. After a period with the Lagos Railway, he became General Manager of the Nigerian Railway in 1912 and held this position until 1916. A year later he was made Brigadier-General, and Director, Inland Waterways & Docks, Royal Engineers. Between 1919 and 1931 he was General Representative in Lima of the Peruvian Corporation Limited ; in the latter year he became a Director.

Mr. John Benstead, who is to become General Secretary of the National Union of Railwaymen at the end of the year, on the retirement of Mr. Marchbank, entered the service of the former Great Northern Railway in 1911. He served with the Royal Navy from 1915 until 1919, mainly in H.M.S. *Warspite*. He was Secretary, Peterborough No. 1 Branch, N.U.R., from 1922 until 1935, and held appointments also during that period as Secretary,

Mr. John Benstead

General Secretary-Elect,
National Union of Railwaymen

Eastern District Council (1923–29), and as a member of the National Executive Committee (1930–32). He became Organiser, Southern District, in 1935, and was appointed Assistant General Secretary in 1939. Mr. Benstead was a Member of Peterborough City Council from 1929 until 1935, and was Deputy-Mayor of that city in 1932 ; he is at present Justice of the Peace for the Liberty of Peterborough. He relinquished a prospective parliamentary candidature for Ashton-under-Lyne on being appointed a full-time officer of the National Union of Railwaymen.

The late Lt.-General Sir George Macdonogh, who was Chairman of Scammell Lorries Limited, left £53,784.

Mr. G. D. Brophy, Assistant General Agent, Passenger Department, Canadian Pacific Railway, has been appointed General Agent, in succession to Mr. F. C. Lydon, who retired on September 30 after 55 years' service. Mr. J. C. Glendinning, Manager, Tariff & Ticket Bureau, C.P.R., also retired on that date, after 37 years' service ; he is succeeded by Mr. R. H. M. Falls, Assistant Manager, Tariff & Ticket Bureau. Mr. G. J. Phelan, Chief Clerk, Tariff & Ticket Bureau, becomes Assistant Manager.

Sir Thomas Gordon, Ministry of War Transport Representative, has been appointed Director of Shipping, Australia.

G.W.R. Road Transport

Mr. F. C. A. Coventry, Superintendent of Road Transport, has retired and the company has abolished the department and placed the majority of the staff under a Cartage Controller on the staff of the Chief Goods Manager.

G.W.R. Appointments

The following appointments are announced :

Mr. A. E. C. Dent to be Road Motor Engineer, Paddington.

Mr. D. Blee, District Goods Manager, Birmingham, to be Assistant to Chief Goods Manager, Paddington.

Mr. W. H. E. Humphrey, Assistant Superintendent of Road Transport, Paddington, to be Cartage Controller, Chief Goods Manager's Office, Paddington.

Mr. J. A. Warren-King, District Goods Manager, Worcester, to be District Goods Manager, Birmingham.

Mr. T. H. Hollingsworth, Assistant District Goods Manager, Cardiff, to be District Goods Manager, Worcester.

Mr. W. Lampitt, Assistant to Goods Agent, Bristol, to be Outdoor Representative, Chief Goods Manager's Office (Working), Paddington.

Mr. H. E. Hallett, Chief Clerk, Divisional Superintendent's Office, Chester, to be Assistant Divisional Superintendent, Chester.

Mr. R. H. Price, Head of Passenger Train Section, Divisional Superintendent's Office, Chester, to be Chief Clerk, Divisional Superintendent's Office, Chester.

A presentation was made on October 20, to Mr. John Reid, who retired from the position of Stationmaster, St. Enoch Station, Glasgow, on August 24.

Richard Thomas & Co. Ltd. announce that, by mutual agreement, Mr. H. R. Ayton has relinquished his position as Assistant Managing Director, and has ceased to be a member of the board.

At the annual general meeting of the British Standards Institution, Sir Percy Ashley, K.B.E., C.B., accepted an invitation to remain as Chairman of the General Council. Dr. E. F. Armstrong, F.R.S., formerly Chairman of the Chemical Divisional Council, was co-opted as a permanent member of the General Council.

Institute of Transport

Among those elected recently to Corporate Membership of the Institute of Transport are Mr. F. W. Lampitt, Chief Goods Manager, Great Western Railway ; Mr. A. E. Sewell, Goods Manager, Scottish

Area, L.N.E.R.; Mr. W. P. Allen, M.C., District Goods & Dock Manager, West Hartlepool, North-Eastern Area, L.N.E.R.; Mr. J. N. Peck, M.C., District Engineer, St. Pancras, L.M.S.R.; and Mr. G. C. Bonner, Traffic Superintendent, Buenos Aires, Central Argentine Railway.

Mr. J. O'Leary, Great Southern Railways, has been appointed Honorary Corresponding Member of the Institute of Transport for Eire.

Mr. W. H. Jarvis

We regret to record the sudden death on October 26 of Mr. W. H. Jarvis, who had occupied the position of Stationery Superintendent of the Great Western Railway since July, 1919. Mr. Jarvis entered the company's service in 1903 and served in the Stores Department, Swindon, and the Statistical Section of the General Manager's Office before his transfer to the Stationery Department. He was a Fellow of the Statistical Society and will be greatly missed by a wide circle of friends.

The funeral service was held at Putney Vale Cemetery, Kingston Vale, on October 29. In addition to relatives and other mourners, those present included :—

Mr. K. W. C. Grand, Assistant General Manager (also representing Sir James Milne); Sir Felix J. C. Pole; Mr. H. W. Croft, Assistant Stationery Superintendent; Mr. S. B. Taylor, Assistant Secretary (also representing Mr. F. R. E. Davis); Mr. T. E. Prior, Chief Clerk, London Divisional Superintendent's Office (also representing Mr. C. T. Cox); Mr. A. H. Bird, Chief Clerk, Superintendent of the Line's Office (also representing Mr. Gilbert Matthews); Mr. Charles Bush, former Registrar of Deeds; Mr. W. G. Smith (Waterlow & Sons Ltd.); Mr. H. A. Smith (Kelly & Kelly Limited) and Mr. J. S. Wakefield (Dunster & Wakefield).

Colonial Railway Appointments

The Secretary of State for the Colonies recently has approved the following appointments :—

Mr. A. Bradshaw, Traffic Inspector, to be Assistant Traffic Superintendent, Gold Coast Government Railway.

Mr. J. A. Smith, Assistant Traffic Superintendent, to be Traffic Superintendent, Gold Coast Government Railway.

Mr. R. G. Wickham, Assistant Mechanical Officer, Nigerian Railway, to be Senior Locomotive Superintendent, Gold Coast Government Railway.

Mr. J. K. Dougal, Traffic Inspector, to be Assistant Traffic Superintendent, Sierra Leone Government Railways.

Mr. E. E. Heath, formerly Locomotive Foreman, to be Locomotive Shed Foreman, Sierra Leone Government Railways.

The Crown Agents for the Colonies recently have made the following first class appointment :—

Mr. H. Butler to be Pilot, Temporary, Marine Branch, Gold Coast Government Railway.

Colonel J. D. White, Deputy General Manager, South African Railways & Harbours, who is due to retire in 1943, has had his term of office extended for a further two years. Colonel White is Second-in-Command of the Railways & Harbours Brigade. He went to South Africa originally during the South African War with The Black Watch, before which he had been in the service of the then Caledonian Railway. In 1902, he was given an appointment with the former Natal Government Railways, and he remained in Natal after Union as a member of the staff of the South African Railways & Harbours. He gained experience of all forms of operating work, particularly in connection with military movements, and in 1913 was commended by General Tim Lukin for his services during the Indian strike in Natal. He earned further praise from the G.O.C. the Imperial troops for his work in the embarkation and disembarkation of troops during the South African War. During the 1914-19 war he was responsible again for troop movements, so that his knowledge and experience are of particular value at the present time. In 1925 he was appointed Road Transport Officer for the Union of South Africa, and in 1927 became Manager, Road Motor Services. He was made Acting System Manager, Johannesburg, in 1931, and a year later was promoted to a similar position at Port Elizabeth. In 1936 he became System Manager, Durban, and in 1937 was transferred to Johannesburg as Chief Traffic Manager. In November, 1940, Colonel White was appointed to the newly-created position of Assistant General Manager (Operating), and shortly afterwards he became Deputy General Manager.

Mr. Stanley Kennedy has joined the board of the Wilts & Dorset Motor Services Limited, of which Mr. George Cardwell is Chairman.

Mr. P. G. Stone-Clark and Mr. J. Howard Mills have been appointed Directors of the Caledonian Omnibus Co. Ltd., of which Mr. Stanley Kennedy is Chairman.

Mr. Thomas Meageen, Managing Director of the Cumberland Motor Services Limited, has been appointed Chairman of that company. Mr. Stanley Kennedy becomes a Director.

Mr. A. W. A. Chivers has been elected a Director of the Aldershot & District Traction Co. Ltd., in succession to Mr S. Kennedy.

Mr. J. S. Wills has been elected a Director of Ribble Motor Services Limited in succession to Mr. F. P. Arnold.

Mr. Charles D. Stanley has resigned from the boards of the Caledonian Omnibus Co. Ltd., Cumberland Motor Services Limited, and Wilts & Dorset Motor Services Limited, three of the companies which came under the control of Tilling Motor Services Limited as a result of the Tilling-B.A.T. re-organisation scheme.

The members of the recently-established Plymouth Transport Joint Committee are as follow :—

Representing Plymouth Corporation.—Alderman L. R. Dunstan, J.P., Alderman Solomon Stephens, J.P., Councillor F. H. Baker, Councillor L. J. Hodge, and Councillor W. T. Reeve.

Representing the Western National Omnibus Co. Ltd.—Messrs. F. C. A. Coventry, Arthur G. Dennis, and P. G. Stone-Clark.

We understand that Mr. Coventry is retaining his membership of this joint committee, although he has retired from his position as Superintendent of Road Transport, Great Western Railway.

Indian Railway Staff Changes

Mr. P. H. Seshagiri Rao has been appointed to officiate as Financial Adviser & Chief Accounts Officer, E.I.R., as from June 8.

Mr. N. C. Deb has been appointed to officiate as Deputy Chief Accounts Officer, E.I.R., as from the same date.

Mr. S. D. Bamjee, Deputy General Manager (Works), E.I.R., has been confirmed permanently as Deputy Chief Engineer of that railway.

Rai Bahadur Kanchi Prasad has also been confirmed, but provisionally, as Deputy Chief Engineer, E.I.R.

Rai Bahadur P. L. Gupta has been appointed to officiate as Divisional Superintendent, E.I.R., as from June 15.

Khan Bahadur Q. Z. Hussain has been appointed to officiate as Deputy General Manager (North-East Communications), B. & A.R., as from July 13.

Mr. C. Grasemann, Public Relations & Advertising Officer, Southern Railway, and Chairman, R.E.C. Publicity Committee, who is Master of the Honourable Company of Fruiterers, presenting the Lord Mayor of London with a basket of fruit on October 21

TRANSPORT SERVICES AND THE WAR—164

Government Control of Long-Distance Road Traffic

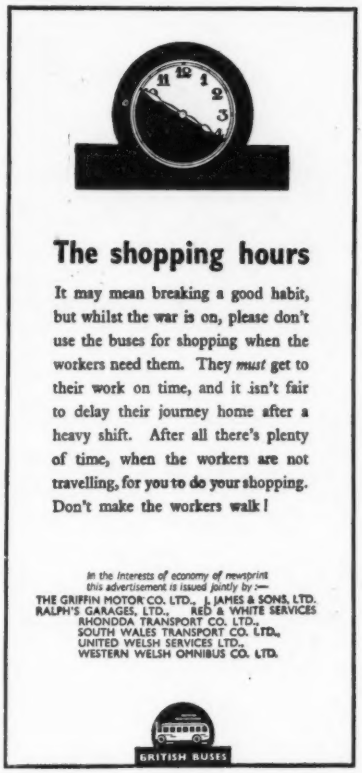
In order to make the best possible use of road haulage vehicles, and to conserve rubber and fuel, the Government has decided to bring longer distance road haulage traffic under control, solely as a war-time measure. Initially it is intended to cover goods conveyed distances of 60 miles and upwards, but shorter distance traffic and vehicles may be brought within the scope of the control later. At the outset, the movement of household furniture, bulk liquids, smalls, and abnormal indivisible loads will be excluded from the scheme. It is estimated that some 25,000 vehicles now engaged in long-distance traffic will be directly controlled by the Government. The traffic now handled under the existing Road Haulage Scheme will be dealt with by the enlarged organisation, which will unify and absorb the functions of the Hauliers' National Traffic Pool and its local branches. Owners of controlled vehicles will retain their business identities and will continue to maintain their own vehicles and employ their own drivers. There will be 12 divisions under the Ministry of War Transport, coinciding with the Civil Defence Regions. Each division will be sub-divided into areas. The divisional and area haulage officers will be drawn mainly from the haulage industry, but will not be actively associated with running any private road haulage business while they hold office. Vehicles will be grouped into about 450 units, each centred on a firm with the necessary facilities.

A Rural Station in Wartime

All over the country are many small wayside stations built to serve the needs of a small village population. Many of these stations still retain their rural peacefulness despite the war, but some have been changed to an amazing extent by reason of the fact that either an aerodrome, factory, or camp has been built in the vicinity. One Southern Railway station in the south of England, for example, dealt with about 600 passengers, a small number of parcels, and an occasional wagon of merchandise, in the course of a pre-war year. When the political situation became serious, it was decided to build a large aerodrome adjoining the station, and, as the war proceeded, further developments took place, including the building of a military camp. Latterly, large numbers of troops from America have been drafted into the district.

These developments naturally led to a remarkable alteration in the traffic dealt with at the station. Special trains arrive with troops, munitions, foodstuffs, and building materials, and the difficulty with regard to staff became so acute that the stationmaster's wife volunteered to do her bit and is now practically running the station with the stationmaster and the assistance of two elderly porters and a young boy. The stationmaster's wife is, in fact, doing the duties of clerk, ticket collector, and porter, and the work goes on seven days in the week. The following statistics show what change has taken place in the course of a few years:—

	1937	1941
No. of passengers booked ...	600	10,838
No. of parcels handled ...	2,579	6,108
No. of goods wagons handled ...	777	6,839


The shopping hours
It may mean breaking a good habit, but whilst the war is on, please don't use the buses for shopping when the workers need them. They must get to their work on time, and it isn't fair to delay their journey home after a heavy shift. After all there's plenty of time, when the workers are not travelling, for you to do your shopping. Don't make the workers walk!
In the interests of economy of newsprint this advertisement is issued jointly by:—
THE GRIFFIN MOTOR CO. LTD., L. JAMES & SONS, LTD.
RALPH'S GARAGES, LTD., RED & WHITE SERVICES
RHONDDA TRANSPORT CO. LTD.,
SOUTH WALES TRANSPORT CO. LTD.,
UNITED WELSH SERVICES LTD.,
WESTERN WELSH OMNIBUS CO. LTD.
BRITISH BUSES

One of the local press advertisements sponsored by the British Omnibus Companies Public Relations Committee

Similar developments are, of course, taking place in many parts of the country.

Paris Bus Services

In June last it was announced that by reason of the acute shortage of petrol and rubber, all the buses operating in Paris were withdrawn from service towards the end of May, leaving the Metro as the only public means of urban traffic. No precise information was then available as to how many buses had been working in Paris recently, but we pointed out at page 684 of our June 19 issue that undoubtedly it was a very much smaller total than that suggested by fantastically exaggerated statements in some daily newspapers, certain of which gave figures as high as 5,000 vehicles. We now learn that at the beginning of 1942 the route length of the Paris bus system was 236 miles, compared with 220 a year previously. The bus fleet in operation was 747, of which 157 were producer-gas propelled, working with charcoal fuel; 136 using alcohol; and 454 driven by town gas.

During 1941 the average length of fare stages had been reduced; the price of 20-ticket booklets increased; and first class was abolished on the buses.

It is not known whether any of the Paris bus services has yet been restored, but it seems unlikely, in view of the recently-announced further restrictions on French provincial services as from November 1.

Development of Italian Road Services

A report recently issued by the Italian Ministry of Communications reveals that the road motor services which the Italian State Railways established in 1940 (see THE RAILWAY GAZETTE of December 19/26, 1941, page 655) with a view to easing the traffic position of the railways, now comprise 42 lines, totalling more than 7,000 km. (4,350 miles), with 150 vehicles covering about 30,000 km. (18,650 miles) daily. The organisation of the road motor services resulted in a saving of 4,170 railway wagons a day, it is stated.

Roumanian Road Schemes

Some 5,000 km. (3,100 miles) of roads are to be modernised in Roumania, in accordance with agreements recently concluded between the Roumanian Ministry of Public Works on the one hand and Roumanian, German and Italian contractors on the other. Of the total, 1,000 km. (620 miles) have been entrusted to the Roumanian Asociatia Grupul Roman; 3,200 km. (1,996 miles) to the German group Dorubau; and 850 km. (530 miles) to the Società Italo-Romena. The German group is said to have reconstructed some 20 km. (12½ miles) so far, and the whole work allotted to it is to be completed within six years. The work of the Società Italo-Romena will take five years to complete. Possibly the more leisurely work of the Italians has been taken into account.

When the whole scheme is complete, the Roumanian system of modern roads will aggregate 11,861 km. (7,370 miles). The large expenditure for road reconstruction is to be covered by a special levy on goods conveyed by the railways and on the River Danube, as well as on imported goods.

Trans-Saharan Railway

It is reported that construction work on the Trans-Saharan (or Mediterranean-Niger) Railway was suspended on July 15 because of the intense heat, but was resumed on September 15. When work was brought to a standstill on July 15 it is said to have reached a point 65 km. (40 miles) south of Colomb Bechar, in Algeria. The number of workers then engaged was stated to total 4,000, and it was said in the Moroccan press that track was being laid at the rate of 1 km. a day. Beni Abbas is approximately 360 km. (225 miles) from Colomb Bechar, but nevertheless Beni Abbas is stated to be the objective by the beginning of 1943, indicating a higher rate of construction than that previously attained. This is not unlikely in view of the fact that engineering works south of Colomb Bechar are expected to be few and light.

Transit between Tunisia, Algeria, and Morocco

The Vichy Government issued a French Colonial Decree dated June 8 making provision for international railway transit between Tunisia, Algeria, and Morocco. The arrangements apply to freight and to passenger luggage on the main railway systems, and provide for the points of entrance and exit to be Ghardimaou between Tunisia and Algeria; and Oujda, between Algeria and Morocco.

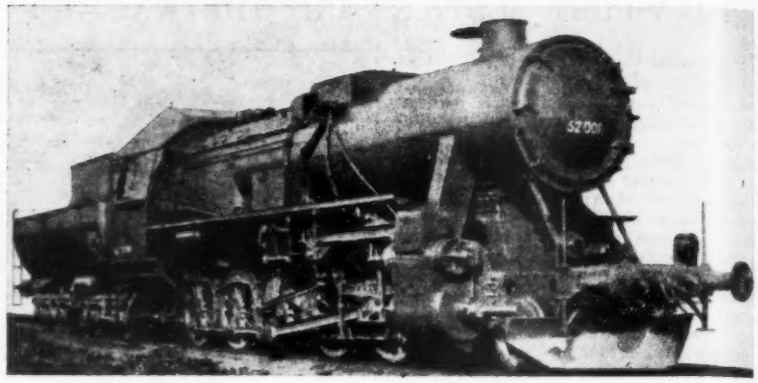
In respect of rolling stock used for such services, the Algerian State Railways are required to make a declaration to the customs regarding every vehicle entering or leaving Algeria, and to undertake to re-import or re-export it (as the case may be) within an extreme limit of three years.

It would seem that the through transit arrangements are confined to the standard-gauge railways which constitute the trunk system. No special arrangements have been reported in connection with the section already in service of the Mediterranean-Niger Railway, which crosses from Morocco

into Algeria but which is probably not available for public traffic.

The German War Locomotive

The Official German News Agency announced on October 12 that the first so-called war locomotive (*Kriegslokomotive*) had been completed at a German locomotive works. The new engine was built on the principles laid down by the Reich Ministry for Arms & Munitions last March, with every possible economy of material and labour. It is stated that the new locomotive, with its tender, can be completed with a saving of 26 tons of material and of 6,000 working hours, compared with previous engines. In order to rationalise and increase the output of locomotives in Germany, only this type will be built in future. It is designed so as to be specially suitable for employment in the low temperatures encountered in the East. The new engine, with nine new wagons, is stated already to have completed successfully a trial run of over 3,125 miles across Germany and ocupied territory under exacting conditions. It appears that light alloys have been employed in the construction of both locomotive and wagons to a considerable extent, with reputed savings in steel, copper, and tin ranging from 16 to 90 per cent. Probably this accounts for popular press reports that the engine is built "entirely of tin." Some of the characteristics of the new locomotive may be seen from the accompanying illustration, which we have received through a neutral source.



The first of the new "Series 52" German war locomotives

Railway War Efforts in Egypt

Copies have just reached this country of the annual report on the working of the Egyptian State Railways, Telephones, & Telegraphs for the financial year 1940-41, which ended on April 30, 1941. The actual report is dated from the General Manager's office, Cairo, on April 15, 1942, and the information relates in the main to an earlier period in the war. It is pointed out that full details of the war efforts of the administration cannot be given at present, but that since the beginning of the war the Egyptian State Railways have had to meet heavy demands for military traffic and at the same time to comply with the vital demands of the civil population and of the Egyptian Government, and also to produce the necessary facilities to meet this extra traffic. By reason of shortage of locomotives and rolling stock it has proved difficult to satisfy both military and traffic demands, and locomotives had to be pooled, with little time to effect repairs.

By careful control, a satisfactory percentage of locomotives and wagons has been kept available for service. In order, however, to increase the use of wagons, the administration has resorted to various means, including the following:—

(*a*) The rated maximum capacity of a considerable number of wagons has been raised by about 12 per cent.

(*b*) The free time allowed for unloading of wagons has been reduced from 12 hr. to 8 hr., and rules of demurrage have been stiffened.

(*c*) A number of wagons has been strengthened to enable heavier loads to be carried.

By reason of the foresight shown by the administration at the beginning of the war in increasing its stock of essential materials, lubricants, coal, etc., necessary to the repair and operation of trains, the general position has remained satisfactory.

In order to save coal, a programme of converting 160 locomotives to burn mazout (heavy oil) was begun, and was in progress at the end of the period covered by the report. This necessitated extra work on the Mechanical Workshops & Engineering Department in constructing oil storage tanks at the various depots.

A.R.P. on the Central Argentine

Anti-aircraft defence exercises were carried out recently for the first time in the City of Buenos Aires. The zone selected for the initial tests was located within that served by the electrified suburban line of the C.A.R.; and, acting on instructions received from the military authorities, the company adopted blackout meaures on certain trains and at certain stations within the specified zone between the hours of 10 and 10.45 p.m. on October 1, and between 10 and 11 p.m. on October 5. During these periods the window shutters were lowered and the interior illumination dimmed on trains running between Retiro Terminus and Rivadavia and Colegiales Stations, situated respectively on each of the suburban branches. The lighting at the intermediate stations between these points was confined, on a reduced scale, to the platform shelters. The edges of the platforms and turnstiles were painted white for the guidance of passengers, who also were given precautionary instructions as to boarding, and alighting from, trains during the blackout periods. Street lights were extinguished and those on road vehicles were dimmed.

U.S.A. Army-Built Railway

In Louisiana on July 11 last, the 711th Engineer Battalion, Railway Operating, the first battalion of its kind ever to be organised in the United States Army, completed the first army-built strictly military railroad in the history of the country. The new road, which extends between Camps Claiborne and Polk, two of the large military encampments of the country, is interesting not only because it was built by military personnel, most of whom were former officers and employees of many of the Class I railways of the U.S.A., but also because it will be used as a training ground for hundreds, and possibly thousands, of men in military railway service, including those engaged on track, bridge, and building maintenance, who, with thousands of others undergoing similar training in other parts of the country, will bear the brunt of maintaining rail communications with the American fighting forces wherever they may go. The new line, known as the Claiborne & Polk Military Railway, is about 50 miles in length, single track throughout, and extends in a general east and west direction, with Camp Claiborne at its east end and Camp Polk at its west end.

As it is not intended as a heavy-duty trunk line, but primarily as a training ground for military men in railway operation and maintenance, the new line was built to standards adequate only to its essential purpose, although substantial in every respect. Speed was also a factor in the construction of the line, affecting immediate standards, and every consideration was given to completing and placing the line in service at the earliest possible date, leaving many refinements to be made after the establishment of through train operation. The ruling gradient in each direction is 1 in 50, and speed limits of 30 to 35 m.p.h. have been imposed. In the main, viaducts have been limited to 20 ft. in height, and cuttings to 15 ft. in depth. Second-hand rails of 75 lb. and 80 lb. weight have been used. There are in all 25 bridges on the line, all of which are of creosoted timber construction; the longest bridge is 2,126 ft. in length, with a maximum height of 15 ft.

U.S. Army Transportation Corps

The creation of the Army Transportation Corps of the Services of Supply was announced by the United States War Department in the first week of August. Its object was stated to be that of co-ordinating, directing, and speeding the flow of men, equipment, and supplies into the war effort. The Transportation Corps, which absorbs the function of the former Transportation Service and undertakes new and broader activities, has Brigadier-General Charles P. Gross as its chief, and Brigadier-General T. H. Dillon as Deputy Chief. Brigadier-General Gross was nominated a Major-General a few days after his new appointment. The new Corps has a status paralleling generally that of the U.S. Corps of Engineers and the Quartermaster Corps and will run its own replacement and unit training centre for enlisted men. It will obtain additional officer personnel from civilians newly commissioned in the U.S. Army and from Officer Candidate Training Schools of the Services of Supply. General Gross, the announcement explained "is in effect the traffic manager of the War Department for rail, water, and highway shipments of all types. He is responsible also for operations of all field establishments pertaining to these forms of transportation. These include ports of embarkation, port agencies, transportation agencies, holding and reconsignment points, and regulating stations."

Questions in Parliament

Cheap Travel Tickets

Mr. T. E. Harvey (English Universities—Ind.), on October 22, asked the Parliamentary Secretary to the Ministry of War Transport whether his attention had been called to the serious hardship to students and part-time students arising from the withdrawal of cheap travel tickets; and whether he would consider some special concession in such cases.

Mr. P. J. Noel-Baker, in a written reply, stated that the withdrawal of cheap day tickets was a necessary measure which the Minister of War Transport adopted with great regret. He was, however, convinced that to make these special concessions urged by Mr. Harvey would lead to similar demands by others with equal claims to consideration, and would thus defeat the purpose he had in view.

Petrol Allowance

Mr. H. Brooke (Lewisham West—C.), on October 22, asked the Minister of Fuel & Power whether, in view of the loss of shipping and of life involved in importing petrol, he would consider introducing further measures of economy in civilian motoring.

Mr. Geoffrey Lloyd (Joint Parliamentary Secretary to the Ministry of Fuel & Power): Yes, Sir. The increasing needs of the Armed Forces for present, and still more for future, operations make it necessary to effect economies in all other consumption. The Government has therefore decided that the civilian motorist must be called on for a further contribution to this effort. Further general reductions will be made in petrol allowances for business and professional purposes. These reductions will take effect in the issues made in November for the period December-January-February.

Mr. A. Bevan (Ebbw Vale—Lab.) asked if the time had not arrived, in the interests of economy of petrol, to restore the road signs up and down the country. He said that many soldiers driving vehicles of all kinds went many more miles than they needed to do, and were held up for many hours because they simply could not find their way about.

Mr. Lloyd said that was a matter for the Minister of War Transport. It could not possibly take the place of the measures which he had mentioned.

Mr. M. P. Price (Forest of Dean—Lab.): Will any steps be taken, in view of the further restrictions on private motorists, to see that bus services are put in such a condition as to assist those who have to get in to do the essential shopping necessary in the countryside, which at present they cannot do?

Mr. Lloyd: The Minister of War Transport has undertaken to take into account these further restrictions in the arrangement of the bus services.

Later the following detailed statement was circulated by Mr. Lloyd: The Government has decided to apply the following further measures of economy, beginning with the issues of petrol coupons made to the majority of motorists in November for use during December, January, and February.

(1) In the case of motorists whose work is directly related to the war (to whom therefore "E" coupons are issued) there will be general reductions of the allowances granted for journeys made in the actual course of their work. The reduction will be 10 per cent. in the case of normal allowances, and more on the larger. These motorists are asked to meet the reduction by a more economical planning of their journeys, and by increased use of public transport.

(2) The allowances of motorists receiving "E" coupons for journeys between home and place of duty will also be reduced. They can no longer expect to make these journeys in their own cars on every working day, and will be expected to cover other days by sharing or other arrangements. Motor cyclists will be allowed a larger mileage than car-users, and car-users who enter into officially approved undertakings for the regular conveyance of other workers will be allowed a larger mileage than those who travel alone.

(3) The maximum allowances for the cars of applicants engaged in work not directly connected with the war, and therefore receiving "S" coupons, will be reduced by 25 per cent. The motor-cycle allowances of this class will not be reduced.

(4) There will be special arrangements to discourage further the use of high-powered cars. In general, where other circumstances are equal, the allowance for a motor cycle will permit a larger mileage than for a car, and the mileage possible with a car will decrease as the horse-power increases. The rate of decrease will be very steep at the upper end of the horse-power range.

(5) Further reductions may shortly be necessary, especially as to motorists who receive "S" coupons.

(6) It is not intended to make any immediate general reduction of domestic allowances, but the sifting process already announced will be continued.

(7) Comparable reductions will be imposed on the consumption of Government Departments and local authorities.

Staff and Labour Matters

Fair Wages Resolution

The White Paper, Cmd. 6399, presented to Parliament on October 13, 1942, sets out the draft of a new fair wages resolution to replace that passed by the House of Commons in 1909 to regulate wages conditions in Government contracts. The White Paper explains that it has long been recognised that the existing fair wages resolution of the House of Commons, which was passed in 1909, is not entirely appropriate in the changed circumstances of the present day, and the question of a new resolution has been under consideration for some time. As a result of discussions between the British Employers' Confederation, the Trades Union Congress, and the Government, agreement has been reached on the draft of a new resolution for submission in due course to the House of Commons for its approval.

The most important changes are :—

(1) The standard of fair wages will no longer be solely the practice of "good employers" in the district. The employer will be required to observe such conditions as have been established for the trade or industry in the district by representative joint machinery of negotiation or by arbitration.

(2) The new resolution specifically requires the contractor to observe "fair" conditions of labour as well as "fair" wages and to apply them to all persons employed by him in every factory, workshop or place where the contract is being executed. Contracting Departments will require an assurance from a new contractor that to the best of his knowledge and belief he has complied with the general conditions of the resolution for at least the previous three months.

(3) Under the old resolution the Minister of the Contracting Department had, if called on, to decide whether or not fair wages were being paid. Under the new resolution any such questions will be reported to the Ministry of Labour & National Service and if not disposed of by negotiation, will be referred to arbitration.

(4) The contractor shall recognise the freedom of his workpeople to be members of trade unions.

While the Conditions of Employment & National Arbitration Order, 1940 (made under the Emergency Powers (Defence) Act, 1939) remains in force, the position of Government contractors as to wages and conditions of employment is governed by that Order. There is, accordingly, no immediate need for seeking to amend the existing fair wages resolution, and before asking Parliament to consider the terms of the draft, it is desirable to have further experience of the administration of the order and to allow opportunity for considering what changes may be necessary in view of any future developments as to the enforcement of industrial agreements. The Government, however, accepts the view of the Trades Union Congress General Council and the British Employers' Confederation that a statement should be made now of the intention to submit to Parliament at the end of the war a new resolution, which will be in the form of the draft, unless any amendments are agreed in the meantime.

The Paris Metro

As was recorded in THE RAILWAY GAZETTE of May 29, page 610, the Compagnie du C. de f. Metropolitain, in addition to the underground system, operates now all the surface public-transport systems in Paris and the surrounding areas as the result of the amalgamation which took place recently. An Act of September 20, 1940, provided for the establishment before July 1, 1941, of a single transport organisation replacing the Metro and the S.T.C.R.P. (Société des Transports en Commun de la Région Parisienne), which operated the Paris bus services; the execution of this task was entrusted to the Conseil des Transports Parisiens. As from October 1, 1940, it was that body which dealt with operational problems, rates and fares, timetables, and certain other matters. A further Act, dated June 26, 1941, and published on August 4, 1941, laid down that the operation of bus services by the S.T.C.R.P. was to terminate by December 31, 1941, and that the Metro system and the bus services were to be operated jointly, as from the same date.

Negotiations between the Ministry of Communications, the Conseil des Transports Parisiens, the City of Paris, and the two companies concerned terminated with the conclusion of two agreements on December 1, 1941. The first, between the Seine Department and the Metro, provided for the operation by the latter of the surface transport systems; the second, concluded between the Seine Department, the City of Paris, and the Metro, established the single transport body envisaged by the Act of September 20, 1940. A special Law of December 27, 1941, published on March 2 & 3, 1942, sanctioned these agreements.

As was recorded in our May 29 issue, the operation of the surface transport systems by the Metro is provided for at present until December 31, 1955. The underground system and the surface systems are placed under separate financial administrations. To avoid competition between the underground system and the surface systems, it has been agreed that the return received from the operation of the underground services to which the Metro is entitled is to be reduced if the traffic exceeds certain limits.

(*See Editorial note, page* 434)

Institution of Production Engineers

Sir Ernest Lemon, Vice President, L.M.S.R., who, as recorded in our last week's issue, has been elected President of the Institution of Production Engineers, in his presidential address on October 23, thanked the institution for the honour conferred on him in making him President. He also paid a tribute to Mr. George Bailey, the retiring President, who had carried the burden of office for the past three years in spite of enormous claims on his time and energies in the war effort generally. It was not necessary to say more than that the name of Metro-Vick was closely linked with that of George Bailey.

Someone had referred to the Minister of Production as "Our Minister" and he would like to make one or two general observations regarding this. He hoped this Ministry would not be abandoned or axed after the war.

An Industrial Staff College

"I regard the industrial effort as being so vital that we must in the future have in the machinery of Government a centre constantly studying the production possibilities of this country," said Sir Ernest. "If it is necessary to have a Staff College for the Army and for the Air Force, it is equally important that there should be created a Staff College capable of training selected persons from industry for the positions they would be called upon to occupy in time of war. This would, of course, have to be a peacetime effort. In the same way that a forces Staff College pre-supposes certain conditions arising and certain enemy powers with which this country might have to be at war, the Industrial Staff College would similarly be studying the sort of development that would be required in the event of this country being attacked by one power or a combination of powers. The studies would include such questions as the siting of factories with due regard to the labour possibilities, immunity from bombing, and other factors. The studies would also measure the industrial efforts required for a given Army, Navy, or Air Force taking into consideration at the same time civilian requirements.

"After serving for a period on the Industrial General Staff, candidates would return to their own jobs because if kept too long from contact with industry, it is very easy to get out-of-date. In this way there could be trained a body of people, which could be brought together at the first threat of war and which would form what might be called an Industrial General Staff. This idea is not entirely original; it is really a development of what has already been done in transport for a number of years. There existed, for many years before the war, a corps known as the Railway Operating Corps, the members of which spent a certain amount of time every year training with the Army.

"There are one or two other points that I would like to make; they are all part of the industrial field. One of these is "phasing," in other words first things first, whether it be raw material, fabricated components, or the finished product. There is a time element which inevitably forms part of these processes and the speed of manufacture must be related to other factors. Again, when putting up factories for the manufacture of, say, aircraft, probably the first thing that should be done would be to shadow firstly the raw materials for the required war effort; secondly, the necessary machine tools, and so on throughout the whole range of the product.

Surely the most important factor in any organisation is the staff running it. I have always said that I would not mind a works being destroyed provided the staff was not destroyed at the same time. It is quite easy to design a new and better factory, a task that can be completed in six to nine months, but to build up a trained staff may take anything from 10 to 15 years. Here then is another reason why there should be available for Government service a body that has been trained to look at the problem of expansion of war industry on broad lines putting first those things which should come first.

Post-War Reconstruction

"As to reconstruction, a machine such as I have described would be invaluable in reverse when the time arose for putting back the people from war industries into peacetime employment. Here again, one must know which type of industry should come first, in order to demobilise in such an order as would give the maximum employment to the men discharged from the Army. There has been much criticism of late to the effect that before reconstruction is considered we must win the war. But it may be quite easy to win the war and lose the peace, if sufficient pre-thought has not been given to the problems that will arise when the war is over. These suggestions pre-suppose that, under the Ministry of Production, there would be a nucleus of staff thinking about what peacetime products could be manufactured at the various Government factories now in existence. Such a problem requires market research to ascertain in what parts of the world the products could be sold, their type, price, and so forth. I know the problem is at present being studied, by the Government, but a great work can be done in this connection by production engineers."

Sir Ernest went on to pay a tribute to all that engineers had done, particularly in the aircraft industry, which, besides starting from very modest dimensions, had changed over from the old technique of wood and wire to the all metal stressed-skin monoplane. Very few people realised that the latter technique began only in 1936.

Capacity for War

An Industrial General Staff corresponding to the Imperial General Staff and looking after production on the industrial side would watch to see that there were the necessary potentials in this country to defend ourselves in case of war. He could give examples of cases where Germany had exported to this country pre-war a lot of key machines at cut prices; apparently she could afford to do so because she had designs for making more for herself at some future date. As there had been no real control over such matters, this country was prevented, through high-pressure salesmanship, from providing the equipment for building extrusion presses, stretching machines, rolling mills, and so on, necessary for the manufacture of light alloys. In other words we had been prevented from developing sufficient capacity to manufacture and it had to be remembered that extrusion presses took at least twelve months to make; this constituted a very serious time lag during war. Moreover, such a body would encourage the use of some of these critical and key materials for peacetime purposes, thus providing a capacity load which, though not necessarily economic from a strictly commercial point of view, were absolutely essential under war conditions. In the plans for reconstruction it would be necessary to find a great many more uses for light alloys thereby providing a potential to keep the Air Force up-to-date and ready for any sudden expansion.

Research

"I must now say a word in regard to research. The work being done by the institution on research is one of its most valuable activities. Whilst it is possible for large firms to keep their own research staff and keep them fully occupied, it is frequently not possible for the smaller firms to do this as they cannot pay the money to get the best men. With a co-operative effort such as that now being done by the institution, the proceedings of which are available for every member, the case becomes somewhat parallel with sub-contracting, which is now such a prominent feature of the production side. I would like to alter the pronunication of the word research and place the accent on the first syllable, that is, re-search, which means to search again. Re-search can be applied to anything as it simply means going over the ground again and finding out a new," concluded Sir Ernest.

The Peruvian Trans-Andean Highway

The completion of the new section of Peru's Trans-Andean road to Tingo Maria, on the eastern side of the great Cordillera, will open up communication with the rich tropical country of the upper Amazon. Surveys were made some years ago for a railway over the same route, but the scheme was abandoned on account of the great difficulties encountered. At a later date, when Peru's programme of highway construction began to take shape, it was decided to continue the road from Huanaco to Tingo Maria, and carry it forward beyond the latter point, to Pucalpa, on the Ucayali river. From this point river steamers of up to 3,000 tons sail to the Peruvian port of Iquitos, on the Amazon. From Iquitos, for 2,300 miles to the Atlantic Ocean, the Amazon is navigable for ocean steamers. At present the route for commerce between Lima, the capital, and the Amazon Provinces, is by ocean steamer through the Panama canal, around northern South America and up the Amazon. Overland, by the Pichis trail, the journey is both arduous and costly, and takes three weeks or more. Obviously, therefore, the new highway will be a vital contribution to the internal development of the Republic. The extension of the new road from Tingo Maria to Pucalpa passes through a gorge in the Blue Mountains, and, when the construction is completed, it will figure as one more of the remarkable engineering works for which Peru is famous.

A Strategic Road

Until recently no suitable pass for a road had been found in the mountains between the Huallaga and Ucayali rivers, but recourse was had to the history of the explorations of the Franciscan Fathers, in the early days of the Spanish conquest and settlement, and especially to the journeys of one Father Abad in 1755. Based on these studies, the engineers discovered an unsuspected canyon, and established beyond a doubt the existence of a low pass, on the course of a hitherto unsuspected river cutting through the mountains and debouching on the eastern slope. The discovery of this important pass may be expected to save the country vast sums of money and years of labour. The road is, moreover, of considerable strategic importance, and it will serve as a useful feeder to

the Pan-American Highway described in THE RAILWAY GAZETTE of May 15, 1942.

The town of Tingo Maria has acquired a new importance, not only on account of its situation at the head of the new road, but because of the establishment there of an agricultural experiment station. It is the centre of a very fertile region, twice as large as the Kingdom of the Netherlands. The town itself is on the Huallaga river, some 350 miles from Lima, midway between the high-plateau country of the Andes and the low-lying jungle of the Amazon valley. Work on the highway, and on the experiment station, was begun under the administration of President Benavides, and it has received fresh impetus under President Manuel Prado, himself a distinguished engineer and scientist.

During the recent visit of Dr. Prado to Washington, an agreement was signed between the United States and Peru involving an Export-Import Bank credit of $25,000,000, and this may be expected to facilitate the completion of the road and further the installation of the experiment station. The agreement also provides for the establishment of a Peruvian-Amazon Corporation, to be charged with the development of rubber and other tropical products of strategic importance, and the United States Rubber Reserve Company, a subsidiary of the Reconstruction Finance Corporation, will acquire all the rubber produced in Peru during five years, other than what is required by Peru itself. Apart from the financial agreement, plans are prepared under which technicians will be loaned by the United States, to aid in the development of the experiment station and also to advise on engineering and mining problems.

Lord Leathers on Transport in War

Lord Leathers, Minister of War Transport, was the principal guest at a luncheon given by the Institute of Transport at the Connaught Rooms, London, W.C.2, on November 3, at which he received a certificate of membership of the institute from the President, Mr. J. S. Nicholl.

Lord Leathers, in expressing his gratitude for his election as an honorary member of the institute, said that he would avail himself of the opportunity to say something of the part played by transport in war, and about the work of his Ministry in co-ordinating and directing it. The members of the institute would know, but the general public might not always realise, that no munition of war could be manufactured unless the raw materials and the workers could be brought to the factory, nor was there any advantage in producing an enormous output of munitions unless they could be carried from the factory to the battle-fronts for use against the enemy.

The majority of persons were immediately aware of the difficulties of passenger travel within this country. The principle on which it was necessary to proceed was that the needs of the war had to come first. This meant that absolute priority had to be given to troop movements and then to workers for their travelling to and from the factories; he could justly claim that this task was performed. In many places services could be improved if satisfactory arrangements could be made to stagger working hours. In areas where this had been done vehicles were less crowded and waiting time was less.

To give this priority to workers, a thousand extra trains were being run every day; this had made necessary drastic cuts in other travel facilities. Trains, apart from those catering for workers, were fewer; feeder services had been substituted for Green Line and similar coaches. With fewer facilities it had been necessary to check demands by withdrawing cheap fares and other pre-war inducements to travel. He regretted having had to impose these inconveniences on the public, but it was not possible to cater for everyone, and he had had to take every step he could to save rubber and fuel. It was only fair to remind those who complained of overcrowding on passenger services that the railways were carrying 34 per cent. more workers than before the war, that some bus undertakings were carrying 80 per cent. to 100 per cent. more passengers, and that many were carrying 30 per cent. to 50 per cent. more.

Although the job had grown in this way the tools for doing it had not multiplied. Locomotive shops and bus builders were not only building locomotives and buses, but also tanks and guns.

After referring to the vital part played by shipping in the war effort, Lord Leathers continued by saying that the railways were the backbone of our transport system, and he recommended his hearers to read the booklet "Transport Goes to War." The railways' performance in the carrying of freight had not been less outstanding than the movement of passengers. Nevertheless, it was only right to sound a note of warning. The worst part of the year for railway operations was fast approaching and large increases in military and essential traffic had to be faced. So far as could be seen, it would be necessary to run up to 200 more freight trains than last winter every day, and to do this with severely limited resources of material and manpower was a very large task indeed. Preparations for it had been made in two ways; first, by effecting all possible economies in transport, and secondly by increasing the physical capacity of the routes bearing the heaviest traffic.

As to economies, all the major traffics were now planned and controlled by the Government departments concerned in consultation with the Ministry of War Transport. Cross movements and needlessly long hauls had been steadily eliminated, and the distribution of food and other bulk traffics had been zoned. At the same time, tracks had been doubled and quadrupled, extra sidings, marshalling yards, loops, and other works had been put in to meet new and increased traffic. As an example he quoted one section of a line which had carried little or no coal before the war and which last winter had carried 170 trains a week.

Lord Leathers explained the new system of road haulage and said that the main object was to control the long-distance haulage of goods by road, which for the time being would be defined as goods travelling 60 miles or over, but it was probable that it would be necessary to lower the distance that would have to be brought under control.

The Minister concluded by paying a tribute to the men and women working in the transport industry. They had stuck to their jobs, through thick and thin, fair weather and foul; they had taken in their stride long hours, the blackout, and bombs, and it was only through their determination that it was still possible to deliver the goods. The war had emphasised what the title of the institute implied—that all means of transport had to be considered as a single interlocking system in which each branch had to be developed so as best to serve the social and industrial development of the country. The hard tests of war had forced the hammering out of a unified system; the lessons that had been learnt would be of greater value when peace came. After the war the nation's recovery and prosperity would be dependent upon its being able to provide a cheap and efficient transport system.

The Brazilian editors who have recently been in this country, visited the Waterloo Signal Box and Feltham Marshalling Yard. Some of them are shown above at the marshalling yard

Notes and News

Ribble Motor Services Limited.—The interim dividend is 4 per cent. (same).

Babcock & Wilcox Limited.—The interim dividend is maintained at 4 per cent.

South African Railway Earnings.—Railway earnings in the Union of South Africa for the period September 6 to October 10 amounted to £4,028,422, against £4,043,039, for the corresponding period of 1941.

Railway Union Declared Illegal.—The Governor of Jamaica has issued an order under the Defence Regulations declaring illegal the Jamaica Government Railway Employees' Union, on the grounds that the latter has as officers non-railway employees. The Governor took this action after the union had applied in court for official recognition and an order certifying the existence of a trade dispute.

British Electric Traction Co. Ltd.—Interim dividend of 15 per cent. less tax on the deferred ordinary stock (the same). This and the interim dividends of 3 per cent. actual on the 6 per cent. cumulative participating preference stock and of 4 per cent. actual on the 8 per cent. non-cumulative preferred ordinary stock (both less tax) are payable on December 12.

Thos. W. Ward Limited.—The report for the year to June 30, 1942, shows a gross profit of £183,892 (£194,845). After deducting £49,009 for depreciation there is a net profit of £134,883 (£143,220). The final dividend is again 7½ per cent., making 11¼ per cent. for the year (same). A transfer of £25,000 is made to reserve, and £5,000 is added to employees' fund. The amount to be carried forward is £127,890 (£126,049).

Murex Limited.—For the year to June 30, 1942, a record trading profit (after depreciation) was secured of £598,707 (£556,947), and dividends, etc., brought in £30,661 (£30,066), making a total of £629,368 (£587,013). Deducting £4,174 for fees, bad debts, etc., and £421,500 (£370,000) for taxation leaves a net profit of £203,694 (£213,222), to which must be added £107,145 brought in. The allocation to general reserve is £50,000 (£75,000), but £25,000 (nil) is put to obsolescence reserve. To the fund against advances to a subsidiary is allotted £17,000 (£31,000). Final dividend on the ordinary stock is again 10 per cent. with a 2½ per cent. bonus, making a total distribution (unchanged) of 20 per cent., less tax, for the year, and leaving £115,339 to be carried forward.

Southern Railway (Extension of Time) Order.—The Minister of War Transport has made the Southern Railway (Extension of Time) Order, 1942 (S.R. & O. 1942, No. 2078) extending by three years the time limited by :—(1) Section 41 of the Southern Railway Act, 1939, for the acquisition of (*a*) lands in Surbiton and Leatherhead required for alterations of levels and gradients of portions of the railway authorised by the Act of 1930, and of Railway (No. 1) authorised by the Act of 1935, authorised by Section 7 of the Act of 1939, (*b*) lands in the City of London required for the subways and enlargements and diversion of tunnels authorised by Section 8 of the Act of 1939, (*c*) lands in Ringwood, Fordingbridge, Surbiton, and Folkestone authorised to be acquired by the Act of 1939. (2) By Section 56 of the Act of 1939 for the acquisition of lands in Richmond, of lands in Bermondsey required for the bridge widening at Rotherhithe authorised by the Act of 1930, and of lands at Boldre.

Eastern Counties Omnibus Co. Ltd.—The interim dividend on the ordinary capital is 3 per cent., tax free (same).

Chilian Railway Finance Co. Ltd.—Notice is given in *The London Gazette* that the name of this company was struck off the register on October 27, and that the company was thereby dissolved.

Buenos Aires Central Railway.—Traffic receipts for the week ended August 22, 1942, were $111,800, a decrease of $16,200 on the corresponding week of 1941. Receipts for the eight weeks from July 1were $899,200, a decrease of $81,000 on last year.

Agreed Charges.—Forty more applications for the approval of agreed charges under the provisions of Section 37 of the Road & Rail Traffic Act, 1933, have been lodged with the Railway Rates Tribunal. Notices of objection must be filed with the Registrar at Wellington House, 125-130, Strand, London, on or before November 10.

British Standards Institution.—At the annual general meeting the Chairman reported the recognition by the Government of the institution as a body for the issue of national standards, except for those issued by the Medical Research Council. Since the last meeting the institution has published 160 new and revised standards, bringing the total issued to 1,300.

Gold Coast Railway Staff Vacancies.—Assistant Engineers (Civil) are required for service with the Gold Coast Government Railway for the duration of the war, or for one tour of twelve to twenty-four months, whichever is the shorter period, with prospect of permanency. Candidates must be associate members of the Institution of Civil Engineers or hold a degree granting exemption from Sections A and B of the institute's examination, and have had practical experience on a British railway ; preference will be given to candidates who have had also practical experience in harbour maintenance. Details are given in our Official Notices at page 455.

Anglo-Scottish Railways Assessment Authority.—The amounts of the average net receipts of the two Anglo-Scottish railways for the five accounting years 1935 to 1939 and their apportionment between England and Scotland which were proposed on July 28 by the Anglo-Scottish Railways Assessment Authority have now been certified by that authority. The respective apportionments are :—for the London Midland & Scottish Railway £11,564,679 to England and £999,076 to Scotland ; for the London & North Eastern Railway £7,690,895 to England, and £419,327 to Scotland.

Production and Engineering Bulletin.—From the October issue which is now available, the *Engineering Bulletin*, formerly published by the Ministry of Labour alone, is renamed the *Production and Engineering Bulletin* and has a section prepared by the Ministry of Production. Henceforward it is to be a joint publication. In a foreword, Mr. Oliver Lyttelton states that both workers and management have reason to be proud of results so far achieved ; the trend is still upward. But in future greater output will come increasingly from more skilful use of present resources, improved design, more efficient planning, better technique, and greater readiness to adopt new ideas. Stress is laid on the need to economise materials. Articles in the October issue include a description of the new regional organisation with a full list of leading persons and addresses. There are articles on the heat-treatment of molybdenum high-speed steel, the principles of milling, glueing devices, rubber salvage, the work of the British Standards Institution, and on the reconditioning of a jig borer. The Labour

British and Irish Railway Stocks and Shares

Stocks	Highest 1941	Lowest 1941	Prices Oct. 30, 1942	Prices Rise Fall
G.W.R.				
Cons. Ord.	43¾	30¾	53½	— 1
5% Con. Pref. ...	109½	83½	111½	+ 1½
5% Red. Pref. (1950)	105½	96½	106	+ 1
5% Rt. Charge ...	129½	116	127½	+ 1
5% Cons. Guar ...	128	110½	125	+ ½
4% Deb.	113½	102½	113	+ 1
4½% Deb.	115	105½	113½	+ 1
4½% Deb.	121½	112	116½	—
5% Deb.	132	122	128½	—
2½ Deb.	70	62⅜	75½	—
L.M.S.R.				
Ord.	17½	11	24½	— ½
4% Pref. (1923) ...	53	33½	61	+ ½
4% Pref.	68½	48½	75	—
5% Red. Pref. (1955)	97⅞	77	100½	—
4% Guar.	100	85¾	101	+ ½
4% Deb.	105¾	97	106½	+ ½
5% Red. Deb. (1952)	110½	106½	108⅛§	— 1
L.N.E.R.				
5% Pref. Ord. ...	3¾	2⅜	7	—
Def. Ord. ...	2	1⅛	3½	—
4% First Pref. ...	52½	33	59½	—
4% Second Pref. ...	19⅜	10	28½	— ½
5% Red. Pref. (1955)	79½	52	92½	—
4% First Guar. ...	90½	74½	95	—
4% Second Guar. ...	80½	59	87	+ ½
3% Deb.	79½	68¾	81½	+ 1
4% Deb.	104	91½	105	+ ½
5% Red. Deb. (1947)	106	102½	103½	—
4½% Sinking Fund Red. Deb.	103½	99 15/16	104½	+ 1
SOUTHERN				
Pref. Ord.	65½	43½	74	— 1
Def. Ord.	15⅝	9	21	— 1
5% Pref.	107	77½	108½	+ 1
5% Red. Pref. (1964)	107	89½	108½	+ ½
5% Guar. Pref. ...	128	111	125	+ ½
5% Red. Guar. Pref. (1957)	114¾	107½	111½	+ 1
4% Deb.	112	102½	109	— ½
5% Deb.	130½	119	128½	—
4% Red. Deb. (1962–67)	108½	102	103¼	— 1½
4% Red. Deb. (1970–80)	108¾	102½	108½	+ 1
FORTH BRIDGE				
4% Deb.	99¾	90½	107	—
4% Guar.	99	85½	103½	—
L.P.T.B.				
4½% "A"	120 15/16	109½	116½	—
5% "A"	130½	115½	124½	—
4½% "T.F.A." ...	103½	99½	101	—
5% "B"	117	102	115½	—
"C"	46½	28½	51½	—
MERSEY				
Ord.	24¾	19½	25½	—
3% Perp. Pref. ...	58	51½	59	—
4% Perp. Deb. ...	100	90	100	—
3% Perp. Deb. ...	73½	63	78	—
IRELAND				
BELFAST & C.D.				
Ord.	4	4	9	—
G. NORTHERN				
Ord.	14½	3	29	+ 1
G. SOUTHERN				
Ord.	14½	5	25	+ 2
Pref.	17	10	28	+ 3
Guar.	44	16	53	+ 3½
Deb.	61	42	70	+ 1

§ ex dividend

OFFICIAL NOTICES

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is 9.30 a.m. on the preceding Monday. All advertisements should be addressed to :—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

OVERSEAS EMPLOYMENT : Assistant Engineers (Civil) are required for the Gold Coast Government Railway for the duration of the emergency or one tour of 12 to 24 months, whichever is the shorter period, with prospect of permanency. Salary : £475 rising to £840 a year ; then, subject to promotion to a vacancy, to £1,000. A higher commencing salary may be offered according to qualifications and experience. Separation allowance for married men is £80 on salary of £475. Free passages and quarters. Candidates must be Associate Members of the Institution of Civil Engineers or hold a degree granting exemption from Sections A and B of the Institution's examination. They must have had practical experience on a British Railway and preference will be given to candidates who have also had practical experience in harbour maintenance. Written applications (no interviews), stating age, and full particulars of qualifications, experience, and name of present employers, should be sent to The Secretary, Overseas Manpower Committee (Ref. 397), Ministry of Labour and National Service, Hanway House, Red Lion Square, London, W.C.1.

section contains articles on preparation for foremanship, weight lifting and carrying, and the transfer of skilled men.

Utility Locomotive.—The Ministry of Supply has given orders for the production of a simplified design of railway engine in whose construction, it is stated, every economy consistent with efficiency in labour and materials have been effected. It is expected that some will be delivered this year. Production of the "Utility" locomotive is said to be one of the biggest constructional programmes ever launched in Britain and will be undertaken by private firms. It can be converted to oil burning or readily adapted to particular needs of various customer countries.

Bengal-Nagpur Railway Co. Ltd.—The directors have declared from surplus profits a second interim half-yearly dividend in respect of the year ended March 31, 1942, of 5s. per £100 ordinary stock, payable on January 1, 1943, making with the guaranteed interest of 1¾ per cent. then due, a distribution of 2 per cent. actual, less tax. A similar payment was made on July 1 last. Profit for the year 1941-42, prior to deduction of Indian taxes was approximately £150,000. This compares with the approximate figure of £32,528 for 1940-41, with the final tax settlement still under dispute.

Silverton Tramway Co. Ltd.—Revenue for the year to June 30, 1942, was £155,143 (£146,006) and other receipts amounted to £3,595 (£3,596), making a gross total of £158,738 (£149,602). Net profit after providing for expenses, taxes, depreciation, etc., was £40,699 (£44,411). Adding £24,819 balance forward from June 30, 1941, gives a total available of £65,518 (£75,792). Deductions from this total are :—£18,750 for dividend paid on August 27, 1941, of 9d. on each 10s. share ; £1,061 interest transferred to reserve ; £5,000 further provision for taxation ; and £5,000 to reserve for replacement of rolling stock, leaving a balance of £35,707. From this balance the directors have appropriated £25,000 for payment of a dividend of 1s. a share.

Road & Rail Central Conference.—At a recent meeting of the East Midlands Regional Committee of the Road & Rail Central Conference at Leicester, Mr. A. E. Sewell, Goods Manager, Scottish Area, L.N.E.R., Railway Chairman of the conference, who attended at the invitation of the road members, expressed appreciation of the work done by the regional committees in tabulating rates charged for traffic carried both by road and by rail, and said that the fact that leading representatives of both the railways and the road-haulage industry continued to meet across the conference table was a notable achievement. Mr. Sewell said that in years to come the nation would need to maintain its internal transport in a state of instant efficiency. To ensure that efficiency, transport must be left free to work on a commercial basis, and must be able to support itself. Therefore, both parties would have to give and take in order to evolve schemes which were mutually satisfactory. The Road and Rail Panels of the Central Conference were anxious to formulate a rates structure suitable to post-war conditions. He was giving particular attention to this, and he relied upon the road side equally in the examination of the inherent difficulties.

The C.P.R. "Empress of Japan."—Mr. D. C. Coleman, President of the Canadian Pacific Railway, has announced that the liner *Empress of Japan* has been renamed *Empress of Scotland* "to rid so fine a ship of so unfortunate a name." The previous *Empress of Scotland* was formerly the Hamburg-Amerika liner *Kaiserin Auguste Victoria*, of about 25,000 tons, built in 1906 by the Vulcan Company, Stettin, and, as one of the German ships handed over in reparations, was bought by the Canadian Pacific. She was broken up at Blyth in 1931. The new *Empress of Scotland*, of 26,000 tons, was built at Fairfield in 1930 and holds all speed records for transpacific crossings.

British Association of Used Machine-Tool Merchants.—The association has been registered as a company limited by guarantee to promote and protect the common interest of the used machine-tool merchants' trade in Great Britain. The first officers are : President, Mr. Frank Widdowson (Herbert Widdowson & Sons) ; and Vice-President & Hon. Treasurer, Mr. J. L. Litton (Litton Machine Tool Company). The other first Members of the Council are Messrs. J. E. Raistrick ; R. J. Austin (Centaur Tool Works Limited) ; H. Vernon ; C. H. Payne (W. Forrest and Company) ; H. Weston (Modern Machine Tools Limited) ; F. G. Calverley (Martin Brothers, Machinery) ; W. M. Pudge ; and E. J. F. Bailey.

Institute of Transport.—The Metropolitan Graduate & Student Society held its inaugural meeting for the 1942-43 session on October 24, when Sir Charles Bressey, C.B., C.B.E., a Vice-President of the institute, gave an address on "The Planning of London," which took the form of a commentary on a number of lantern slides, and covered the development of the medieval city, Sir Christopher Wren's plan for London, its growth since the last war, and the road-building programme around London in that period, the present scope for planning, and comparison of some London lay-outs with those of the Continent. The President, Mr. J. S. Nicholl, C.B.E., was present and expressed thanks to Sir Charles Bressey.

L.M.S.R. Order Confirmation Act, 1942.—The London Midland & Scottish Railway Order Confirmation Act, 1942, which received the Royal Assent on October 23, abolishes the time limitations imposed by the Caledonian Railway (Grangemouth Harbour) Act, 1876, and later extended, on the exercise of the powers to improve the navigation of the River Carron and it empowers the company to carry out named dredging and improvement works for that purpose. The Act also repeals certain provisions of the Caledonian Railway Order, 1910. That Order authorised the abandonment of the Glenbuck and Spireslack to Muirkirk branch railways, but required the company to maintain certain of the railway works and to re-open those railways at the request of the owners of the minerals or stone in the adjoining land in the event of the working of such minerals or stone. No such request has been made and the obligation to maintain such works and re-open these branch railways is now repealed. The Act also enables the company to stop up the Wiel Staves level crossing on the Forfar-Arbroath Railway.

Southern Railway Engine Named.—Another of the Southern Railway's Merchant Navy class locomotives, the *Orient Line* was named at Waterloo Station on November 1. It worked the 12.50 a.m. train from Waterloo to the West of England and before its departure the naming ceremony was performed by Mr. I. C. Geddes, Chairman of the Orient Line. Accompanying him were other Directors of the Shipping Line, the Deputy Chairman, General Manager, and officers of the Southern Railway Company. The *Orient Line* is the ninth of the series which, starting with the *Channel Packet*, represents the Southern Railway's cross-channel services, took in also the Union Castle, Royal Mail, Cunard White Star, Canadian Pacific, P. & O., Aberdeen and Commonwealth and Shaw Savill companies. There is one more to follow, the Blue Star Line.

Contracts and Tenders

The South Indian Railway has placed a contract for a 100-line, 4-digit, rural automatic telephone exchange with the Automatic Telephone & Electric Co. Ltd.

The Egyptian State Railways have recently placed the following orders :—

Westwood MacNeill & Co. Ltd. : Creosote oil.
Pilkington Brothers Limited : Glasses.
Arthur Balfour & Co. Ltd. : Bandsaws and circular saws.
Marconi's Wireless Telegraph Co. Ltd. : Condensers, etc.
Carborundum Co. Ltd. : Grinding wheels.
Charles Richards & Sons Ltd. : Bolts and nuts.
Metropolitan-Vickers Electrical Export Co. Ltd. : Springs.
Bell's Asbestos & Engineering Limited : Cut joints and graphited asbestos.
I.C.I. (Rexine) Limited : Leather cloth.
Sanderson Bros. & Newbolds Ltd. : Bandsaws.
Baldwins Limited : Tools.
John Brooks (Lye) Limited : Tools.
C. & J. Hampton Limited : Tools.
Elliott-Lucas Limited : Tools.
Isaac Nash & Sons Ltd. : Tools.
Wm. Brookes & Sons, Ministry of Supply Factory : Tools.
Vaughan Bros. (Drop Forgings) Limited : Tools.
Wm. Hunt & Sons (Rolling Mills) Limited : Tools.
Director of Transportation, War Office : Galvanised line wire and stay strand wire.

Railway Stock Market

Although most sections of the Stock Exchange have been active, sentiment was influenced by the general disposition to await war developments, but the underlying firmness of markets was again indicated by the absence of any appreciable profit-taking. In accordance with the prevailing experience, home railway stocks have tended to show further gains at the time of writing. Bearing in mind the extent of the rise last month, it is, however, not surprising that a certain amount of profit-taking has been in evidence in the junior securities. Steady investment buying of the prior charges was reported, and there has been a number of further gains in these stocks. In various cases, yields still compare very favourably with those on other front rank investments. Expectation that early in the next session of Parliament, legislation is likely to be submitted in respect of the special war damage scheme for public utility companies, including the railways, has not proved an important market factor. It will be recalled that at one period it was feared that 50 per cent. of the cost of war damage would be charged against earnings in any year in which it was incurred. Subsequently, however, it was made clear at the annual meetings of the main-line companies that liabilities in respect of war damage were to be regarded as of a capital nature, and that it was not intended to make large reserves for this purpose, it having been decided to bring forward proposals to deal with the matter after the war. Realisation that liability in respect of war damage is, in effect, a charge against capital and not against current income, has played an important part in increasing the demand for railway stocks; it having given confidence that there are excellent prospects of dividends being maintained at last year's rates, unless future damage from air raids were on an exceptionally heavy scale. Consequently, the large yields on home railway stocks have attracted widespread attention. Nevertheless, despite the recent large rise in values, yields are, in fact, still quite substantial; that on Great Western being nearly 7½ per cent., while L.M.S.R. ordinary returns 8 per cent., and Southern deferred and L.N.E.R. second preference slightly more than the latter rate. In the case of L.M.S.R. 1923 preference the yield is 6½ per cent., and slightly larger yields than this are obtainable on both L.N.E.R. first preference and Southern preferred. Following the recent widespread improvement in South American railway securities, there was a partial reaction under the influence of the Central Argentine annual report. The latter provided a striking indication of the difficulties experienced by the Argentine railways under existing conditions, particularly in regard to the rise in expenses and the position in regard to exchange, which call for appropriate action by the Argentine authorities. Hopes of the latter in due course, and the disposition to be prepared to take more than a short view, explain the speculative interest maintained in Argentine railway securities. Central Argentine 4 per cent. debentures have, however, moved back to 41 at the time of writing, B.A. Gt. Southern 6 per cent. preference to 22, and B.A. Western 4½ per cent. preference to 27½. Elsewhere, United of Havana debentures moved back to 33 and Leopoldina debentures to 49½.

Among home railways, Great Western ordinary at 55 was higher on balance; the 5 per cent. preference moved up from 110 to 111½, and the guaranteed stock was 125. Following an earlier reaction, L.M.S.R. ordinary rose to 25½; moreover, the senior preference was higher at 75, as was the guaranteed at 101. L.N.E.R. first preference rose to 60, while at 29½ the second preference was unchanged on balance. Southern preferred was higher at 75, as was the deferred at 21½. London Transport "C" was 54½, while the 5 per cent. "B" rose further to 117¾. Canadian Pacifics were higher.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open 1941–42	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc. or Dec. compared with 1941	No. of Weeks	Aggregate Traffics to date: Totals: This Year	Aggregate Traffics to date: Totals: Last Year	Aggregate Traffics to date: Increase or Decrease	Shares or Stock	Prices: Highest 1941	Prices: Lowest 1941	Prices: Oct. 30, 1942	Prices: Yield % (see Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	25.10.42	44,430	+ 7,300	43	911,670	828,320	+ 83,350	Ord. Stk.	10⅜	3½	12½	Nil
	Argentine North Eastern ...	753	24.10.42	14,226	+ 2,952	17	229,500	205,230	+ 24,270	,,	4	1	6	Nil
	Bolivar	174	Sept., 1942	5,518	+ 1,381	40	40,709	34,854	+ 5,855	6 p.c. Deb.	5	5	18½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	2½	19	Nil
	Buenos Ayres & Pacific ...	2,807	24.10.42	86,700	+ 9,300	17	1,442,040	1,299,600	+ 142,440	Ord. Stk.	7⅜	1½	6	Nil
	Buenos Ayres Great Southern	5,080	24.10.42	162,960	+ 29,040	17	2,215,200	2,130,240	+ 84,960	Ord. Stk.	10¾	3½	10½	Nil
	Buenos Ayres Western ...	1,930	24.10.42	53,220	— 2,040	17	827,820	830,580	— 2,760	,,	9	2½	10½	Nil
	Central Argentine	3,700	24.10.42	123,660	— 6,183	17	2,054,817	1,873,449	+ 181,368	,,	8½	2⅛	7	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	9⅛	⅛	4	Nil
	Cent. Uruguay of M. Video...	972	24.10.42	24,271	— 273	17	351,932	373,664	— 21,732	Ord. Stk.	9½	1	6½	Nil
	Costa Rica	262	Sept., 1942	11,556	— 9,881	9	38,244	68,996	— 30,752	Stk.	15⅛	11¼	15	Nil
	Dorada	70	Sept., 1942	19,300	+ 7,300	40	137,705	112,750	+ 24,955	1 Mt. Db.	97	97	88½	6½
	Entre Rios	808	24.10.42	19,104	+ 3,366	17	307,572	300,342	+ 7,230	Ord. Stk.	6½	⅛	8½	Nil
	Great Western of Brazil ...	1,030	24.10.42	17,200	+ 2,200	43	453,600	399,600	+ 54,000	Ord. Sh.	11/-	1/-	29/-	Nil
	International of Cl. Amer. ...	794	Sept., 1942	$324,553	— $42,878	37	$4,633,303	$4,257,101	+ $376,202	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref.	⅛	6d.	1½	Nil
	La Guaira & Caracas... ...	22¾	Sept., 1942	8,590	+ 2,410	40	63,355	58,005	+ 5,350	—	—	—	—	—
	Leopoldina	1,918	24.10.42	31,446	+ 832	43	1,294,961	1,126,427	+ 168,534	Ord. Stk.	4	¼	6	Nil
	Mexican	483	21.10.42	ps. 250,000	— ps. 29,800	17	ps. 4,536,400	ps. 4,910,600	— ps. 374,200	,,	⅛	¼	⅛	Nil
	Midland of Uruguay ...	319	Aug., 1942	10,196	— 2,774	9	22,810	27,480	— 4,670	—	—	—	—	—
	Nitrate	382	15.10.42	10,776	+ 3,047	27	150,871	115,030	+ 35,841	Ord. Sh.	66/	1⅛	75/-	3⅞
	Paraguay Central	274	23.10.42	$3,439,000	+ $347,000	17	$62,307,000	$56,692,000	+ $5,615,000	Pr. Li. Stk.	43	29	51⅛	11⅛
	Peruvian Corporation ...	1,059	Sept., 1942	85,636	+ 4,091	14	251,242	218,753	+ 32,489	Pref.	6½	1⅛	14⅜	Nil
	Salvador	100	Aug., 1942	c 49,000	+ c 1,907	9	c 128,000	c 111,172	+ c 16,828	—	—	—	—	—
	San Paulo	153½	18.10.42	40,133	+ 7,771	42	1,533,749	1,549,065	— 15,316	Ord. Stk.	52	24½	58	3⅜
	Taltal	160	Sept., 1942	4,935	— 2,290	12	16,660	16,390	+ 270	Ord. Sh.	1	6/-	2	Nil
	United of Havana	1,346	24.10.42	41,454	+ 22,872	17	669,924	324,313	+ 345,611	Ord. Stk.	2½	⅛	6½	Nil
	Uruguay Northern	73	Aug., 1942	1,072	— 262	9	2,214	2,690	— 476	—	—	—	—	—
Canada	Canadian Pacific	17,049	21.10.42	1,017,600	— 5,600	42	40,471,800	34,514,600	+ 5,957,200	Ord. Stk.	13-⅛	7⅛	15	Nil
India†	Barsi Light	202	July, 1942	23,685	+ 8,903	17	63,285	67,635	— 4,350	—	—	—	—	—
	Bengal & North Western ...	2,090	July, 1942	261,600	— 5,267	18	1,080,300	1,092,128	— 11,828	Ord. Stk.	345	253	354½	5-⅛
	Bengal-Nagpur	3,267	20.6.42	284,100	+ 31,301	11	2,271,525	2,107,876	+ 163,649	,,	101	95⅜	98	4-⅛
	Madras & Southern Mahratta	2,939	31.7.42	341,625	+ 133,549	18	2,714,939	2,473,086	+ 241,853	,,	105-⅞	101½	101	7½
	Rohilkund & Kumaon ...	571	Sept., 1942	50,850	+ 6,416	27	352,317	367,725	— 15,408	,,	342	290	354½	4½
	South Indian	2,402	20.6.42	179,171	+ 43,616	12	1,376,295	1,113,057	+ 263,238	,,	100	87	99	4½
Various	Beira	204	Aug., 1942	82,089	—	48	825,692	—	—	—	—	—	—	—
	Egyptian Delta	607	20.9.42	10,313	+ 1,106	27	186,515	123,411	+ 63,104	Prf. Sh.	1⅛	29/-	5⅜	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	68	45	37⅛	9-⅛
	Midland of W. Australia ...	277	Aug., 1942	28,739	+ 8,731	4	56,608	38,657	+ 7,951	Inc. Deb.	90½	86½	92½	6
	Nigerian	1,900	25.7.42	70,391	+ 19,240	18	924,271	910,397	+ 13,914	—	—	—	—	—
	Rhodesia	2,442	Aug., 1942	540,350	—	48	5,371,799	—	—	—	—	—	—	—
	South Africa	13,291	12.9.42	843,951	+ 46,083	26	18,510,219	17,603,801	+ 906,418	—	—	—	—	—
	Victoria	4,774	May, 1942	1,364,694	+ 386,440	48	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ⅛

† Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffics are given in sterling calculated @ 16⅜ pesos to the £

§ ex dividend